

the American Perfumer

and ESSENTIAL OIL REVIEW

COSMETICS · SOAPS · FLAVORS

EST. 1906

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CONTENTS · NOVEMBER 1945

| | |
|--|----|
| Hydrogen Peroxide and Peroxy Compounds <i>F. V. Wells F.C.S.</i> | 39 |
| Short Adages <i>R. O'Mattick</i> | 42 |
| A Survey of Spanish Essential Oils <i>Dr. Ernest Guenther</i> | 43 |
| Skin Hazards in Prolonged Cosmetics Contact <i>Louis Schwartz</i> | 45 |
| Cosmetic Trends in the Middle West <i>Jean Mowat</i> | 47 |
| Technical Abstracts from Scientific Literature | 49 |
| Packaging Portfolio | 50 |
| Brighter Fats and Oils Picture Seen <i>Charles E. Lund</i> | 52 |
| Aldehydes for Flavors <i>Dr. Morris B. Jacobs</i> | 54 |

REGULAR FEATURES

| | |
|---|-----|
| Desiderata— <i>Maison G. deNavarre</i> | 35 |
| Questions and Answers | 37 |
| Washington Panorama | 59 |
| New Products and Processes | 67 |
| Among Our Friends | 69 |
| News and Events | 77 |
| Market Report | 97 |
| Prices in the New York Market | 99 |
| THE CHEMICAL NATURE OF THE VIOLET ODOR <i>Dr. Everett Saul</i> | 113 |

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Editorial Comment

Big Christmas Sales Expected

Toiletry sets, always popular items at Christmas time, have been a war casualty due to paper, and other shortages. Indications now point to a supply on the counters of department and drug stores in time for the Christmas trade.

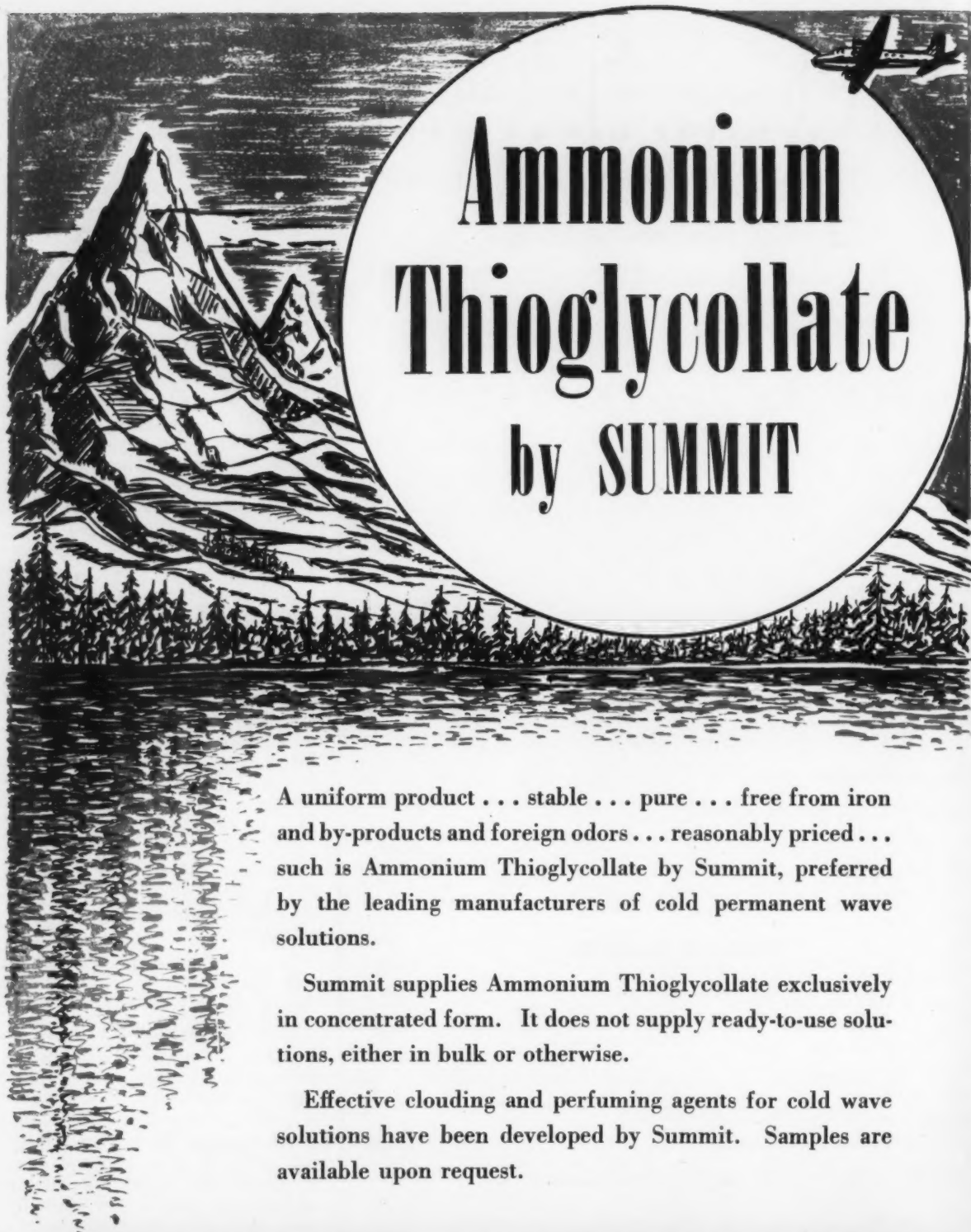
There will be little change in the physical appearance of the packages from pre-war sets as manufacturers will offer their products in the well-known, familiar packages which the public will have no trouble recognizing as old friends. This is largely due to bottle, paper, labor, metal, and other shortages, which happily are being relieved rapidly. One trend that appears to be rather general is a change to smaller packages. That is, if the pre-war set contained three bottles or jars, current models will probably appear as sets of two units.

Metropolitan department stores report that they are getting ample supplies of Christmas toiletries in all classifications except imported perfumes. This should not hinder the rolling up of a volume business in perfumes as the American public has not had its buying influenced by imports for such a long time.

Lipsticks in metal containers are reappearing, and are gradually displacing plastic containers. The supply is still limited but is picking up momentum.

New Cosmetics Outlets

In the September issue of THE AMERICAN PERFUMER we pointed out the tremendous marketing potential offered by food outlets. Now at least one firm is doing something about it in a big way. Kroger Grocery & Baking Co. is selling a line of one hundred well known cosmetics through approximately three hundred stores throughout the middle west. This firm has been in the business of selling cosmetics for some time, but is now putting in special fixtures and is concentrating its efforts on the new line. This may indicate the beginning of a new trend in cosmetics merchandising.



A uniform product . . . stable . . . pure . . . free from iron and by-products and foreign odors . . . reasonably priced . . . such is Ammonium Thioglycollate by Summit, preferred by the leading manufacturers of cold permanent wave solutions.

Summit supplies Ammonium Thioglycollate exclusively in concentrated form. It does not supply ready-to-use solutions, either in bulk or otherwise.

Effective clouding and perfuming agents for cold wave solutions have been developed by Summit. Samples are available upon request.

SUMMIT CHEMICAL PRODUCTS CORP.
Manufacturing Chemists
11 William Street, Belleville 9, New Jersey

Desiderata

by MAISON G. DENAVARRE



M. G. DeNavarre at work in his laboratory

BUBBLES

Irish Moss mucilage makes an excellent thickener and bubble former if plasticized with about 15-20 per cent glycerin. Methyl and hydroxyethyl cellulose are also useful, but some of the wetting agents with which they must be used are not compatible, resulting in separation. About the only thing that makes the mixture clear is the use of alcohol (S.D. or isopropyl). The real problem is the selection of a good wetting agent that will bubble. Most of the old standbys don't work. A mixture of propylene glycol (2 parts) and sorbitol syrup (1 part) will replace part or all of the glycerin. Propylene glycol makes some mixtures more clear than when made with glycerin. But it cannot be used alone or the bubbles formed don't seem to last as long.

MONO ETHANOLAMINE SULFITE

Another source of mono ethanolamine sulfite is offering the material in a 50 per cent solution for use in permanent waving of hair. The liquid is water white in color and satisfactorily priced. Monoethanolamine sulfite is more desirable in some kinds of waving solutions than inorganic sulfites, although it contains about one third as much sulfur dioxide. It is volatile in heat waving methods.

LIQUID LECITHIN

One of the problems in using soy bean lecithin is to get it dissolved in the oily ingredients with ease. Now a liquid lecithin is available. Its advantage over the solid pastes is obvious.

Lecithin has not been used very much in cosmetic emulsions, largely because it has been *thought* that it

would hydrolyse into some evil smelling by-products. Yet lecithin is a most interesting emulsifier and interface modifier. It is definitely worth investigation, especially where neutral emulsions are wanted.

In this line, a so-called synthetic lecithin has recently become available. Actually it is a phosphatide not too different from lecithin as we know it. However, it is being sold for technical use only until such time as its safety is established.

NEW CUTICLE REMOVER

A new idea in cuticle removers is to use a cationic soap in place of ordinary soap or alkali. Not only is it milder in use, but has definite antiseptic properties that retards infection resulting from an over zealous cuticle removing job. Such a product might even be emulsified to produce an unusually novel approach to cuticle removing. A special emulsifier of this type is available. It contains the cationic soap. Simple dispersion in water is all that is required.

BORIC ACID DANGERS

It has finally come. Boric acid is ineffective as a germicide. It might even be dangerous according to Watson, a pediatrics professor writing in the *J.A.M.A.*, who blames boric acid for the accidental death of infants. It has already been eliminated from one state's maternity hospitals. It is probable that others will follow.

Those who have worked with boric acid solutions know that it has exceedingly poor germicidal properties, since saturated aqueous solutions readily support mold and bacterial growth. It is absorbed by the body exceedingly quickly hence one reason

for its being considered dangerous.

With the advent of so-called baby cosmetics, this warning comes at the appropriate time, because most baby toiletries include a borated talc. There never was a good reason for including boric acid in baby talc. It was just put into the formula because it connoted something *antiseptic* and *healthful* to mothers. Since its healthfulness is dubious this is a good time to correct a long standing mistake.

MOISTURE INDICATORS

There are a number of cosmetics that suffer from exposure to excessive moisture, such as wave set powder, hair rinse and chemical heating pads. Here is a place where the moisture indicators devised during the war might come in handy. Such indicators consisted of silica gel containing cobalt salts that turned from blue through violet to pink depending on the amount of moisture the indicator is exposed to. Warehouses and distributors can stop sales or shipments by a quick glance at the indicator card cutting down returns of spoiled merchandise.

PINEAPPLE FLAVOR

Some very interesting chemical work reporting the constituents of the volatile flavor and odour of pineapple has appeared over the names of *Haagen-Smit, Kirchner, Prater and Deasy* in the *J.A.C.S.* A summary of the components of the volatile oil of winter fruit consists of ethyl acetate; acetaldehyde; methyl isocaproate, isovalerate, n-valerate and caprylate to-



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LONG LIVED..
LIKE A REDWOOD TREE



NEW ENGLAND COLLAPSIBLE TUBE CO.

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gether with a trace of a methyl ester of a five carbon hydroxy acid and a sulfur compound. The summer fruit contains ethyl alcohol and acetate, acetaldehyde, ethyl isovalerate, methyl n-propyl ketone, ethyl acrylate and n-caproate together with a sulfur containing compound, ethyl ester of C_5 unsaturated acid and the methyl esters of a C_5 unsaturated acid and a C_5 Keto acid. The summer fruit contains a much larger amount of low boiling material and a greater total of volatile material. The sulfur compound found was later identified as $CH_3SCH_2CH_2COOCH_3$. It was present in the higher boiling volatile material contained in pineapple fruit pulp.

This work dealt with the flavor of trimmed fruit and bears out the well known fact that summer fruit is sweeter and has more flavor. Summer fruit contains 190 milligrams flavor per kilogram of trimmed fruit while the winter fruit contains only 15.6 milligrams per kilogram of fruit. The fresh fruit were subjected to vacuum distillation at 20 mm.

This valuable data will help formulate pineapple flavors and develop fortifiers for natural pineapple flavor. It would be interesting to learn the composition of the flavor oils derived from the peelings for custom

has had it that the pineapple flavor was present more in the peel than in the fruit. Another outstanding fact is the presence of a sulfur containing compound in the flavor constituents. This is not surprising because organic sulfur compounds are notoriously aromatic.

WATER HARDNESS TESTER

A new plastic gadget determines the hardness of water in terms of calcium and magnesium. Its usefulness in controlling boiler scale, plant ash and similar solids is obvious. The method is faster and simpler than the usual soap analysis method.

SUGAR BOOSTER

A St. Louis company offers an ingredient which when added to your sugar, increases its sweetness by about 15 per cent. A pint bottle is said to save 120 pounds of sugar. Putting it another way, one dram of this material when mixed with one gallon of 28 deg. Bé sugar syrup will make it as sweet as 32 deg. Bé syrup. No heating is necessary and it is recommended that the temperature of the syrup never be above 120 deg. F. The ingredient doesn't change the flavor in any way. It is supposed to be satisfactory for all food or beverage purposes.

addressed, stamped envelope for your convenience in replying.

S. J.—NEW JERSEY

A: The estrogenic creams on the market today contain from 4500 to 10,000 International units of natural estrogens. One cream is made with diethyl stilbesterol. There is considerable background on the use of natural estrogens and we are sending you under separate cover the names of several suppliers of these products. Diethyl stilbesterol is reported to be less absorbable by the skin. Your basic formula can be any lubricating or emollient cream composition to which the oil solution of estrogen is added in the proper amount. Most such solutions are sold on the basis of 10,000 International units per cc and, therefore, to make a cream containing 7500 International units per ounce you would add $\frac{3}{4}$ cc to enough cream to make one ounce of finished product.

572. HAIR RINSE

Q: Referring to your recent article concerning hair rinse using sodium diacetate, we would like to know the proportion per gallon and if a preservative is necessary.

F. P.—RHODE ISLAND

A: Realizing that sodium diacetate contains approximately 30 per cent free acetic acid and that ordinary vinegar which is used in hair rinses contains approximately 4 per cent acetic acid, you can determine the concentration very readily yourself. Thus, if you want the equivalent of vinegar as a hair rinse, you would use approximately one pound of sodium diacetate per gallon of finished rinse. No preservative is necessary.

573. NAIL POLISH REMOVER

Q: We have read with great interest your mention of a water soluble material for removing finger nail polish. Please be so good as to put us in contact with the manufacturers so we can obtain representation from Argentina.

R. S. C.—ARGENTINA

A: The water soluble material in question is gamma valero lactone which in a concentration of approximately 50 per cent in water is an excellent nail polish remover. It is already being used in this country. The name of the manufacturer goes to you under separate cover.

QUESTIONS AND ANSWERS

570. USE OF SOLUBILIZERS

Q: Often when we use certain essential oils in making hair tonics, perfumes, colognes, etc., we find a lot of heavy sediment on the bottom of containers. Can this sediment be dissolved by the use of a solubilizer?

C. L.—MISSISSIPPI

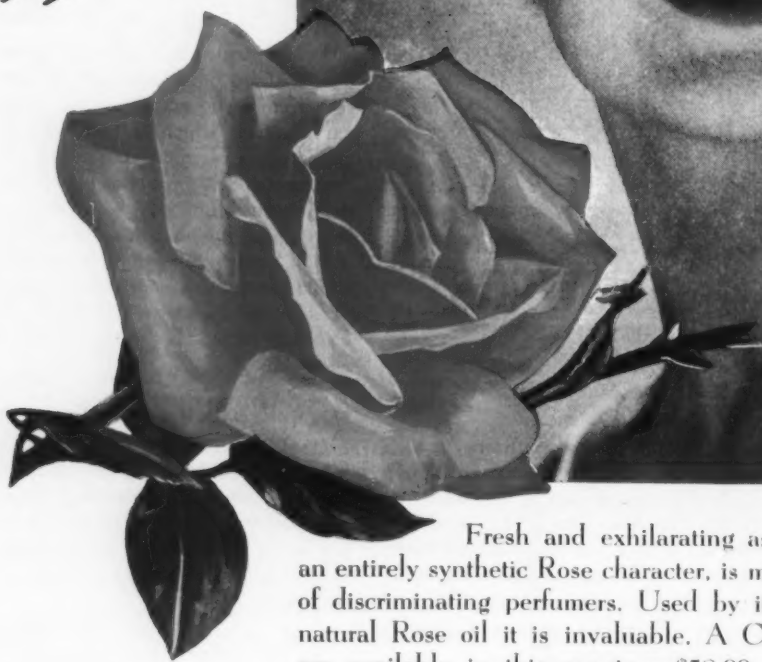
A: The sediment may be insoluble terpenes and dirt or it may be parts of the perfume oil that are not soluble in the alcoholic strength used in compounding your various products. You can overcome a large amount of this tendency to precipitate by adjusting your alcoholic strength or if

you will use the solubilizers in the ratio of from 3 to 6 parts of solubilizer for each part of perfume oil used, dissolving the perfume oil in the solubilizer and then diluting with alcohol or water, or both, you will find much less tendency towards precipitation. In all cases, you should use distilled water.

571. ESTROGENIC CREAMS

Q: We will thank you to advise us as to the basic formula and percentages of estrogen. If possible also advise us as to sources of supply. We are enclosing herewith a self-

Wardia



Fresh and exhilarating as the flower itself—WARDIA—
an entirely synthetic Rose character, is meeting the most exacting demands
of discriminating perfumers. Used by itself or as a replacement for the
natural Rose oil it is invaluable. A Chuit, Naei product, ample stocks
are available in this country—\$58.00 per pound—a trial ounce \$3.75.

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Hydrogen Peroxide and Peroxy Compounds

Hydrogen peroxide and peroxy compounds are used for their bleaching, antiseptic and deodorant effects . . . The hydrogen peroxide solutions which are utilized in the manufacture of cosmetics are remarkably stable

by F. V. WELLS, F.C.S.

HYDROGEN peroxide, H_2O_2 , is used in cosmetics and hair preparations for its bleaching, antiseptic, deodorant, exfoliatory and keratolytic effects. Such effects depend, of course, upon the liberation and utilization of active oxygen. The correlation of activity with stability has engaged the attention of chemists over many years, and it is no exaggeration to state that hydrogen peroxide is nowadays available in extremely stable forms, even in the higher strengths around 30 per cent H_2O_2 . This point, however, we shall return to later.

PROPERTIES OF H_2O_2

Manufactured by various patented processes from barium peroxide, persulphuric acid and persulphates, hydrogen peroxide is a colorless liquid of faint ozone-like odor, with a specific gravity of 1.009 (10 vols. solution) and 1.1032 (100 vols. solution or 30 per cent by volume). The pure material has a pH value of 5 at 25 deg. C., as calculated from the dissociation constant. On dilution with water, the pH increases to 5.3 for 30 per cent H_2O_2 and 5.8 for 3 per cent (by weight).

One of the most irritating and confusing features of commercial hydrogen peroxide solutions is the variability in the description of *strength*. Thus we get some solutions described

as "10 volumes," others as "10 per cent by volume," still others as "10 per cent or so by weight," and even a few by the laboratory check term: "cc. test." The volume strength means the volumes of oxygen at 0 deg. C. and 760 mm. pressure obtained from one volume of the H_2O_2 solution. Percentage by volume is a little more practical—meaning grams per 100 cc., but confusing in that one might expect cc. per 100 cc. The term "cc. test" derives from works testing and means the number of cc. of N/10 KMnO_4 equivalent to 2 cc. of the hydrogen peroxide sample.

STRENGTH OF H_2O_2

Now that hydrogen peroxide is sold by weight, the only common sense method of describing strength is per cent by weight. Much ink has been spilled in argument between customer and manufacturer and among manufacturers themselves on the strength to be supplied for specifications expressed as volume strength, per cent by volume, or per cent by weight. This is because slight differences in specific gravity of different qualities make appreciable differences in the various figures. Another reason for confusion has been that 100 volumes has been described as 30 per cent by volume. In actual fact, true 100 volume is

nearer 30.36 per cent by volume (27.52 per cent by weight). By eliminating all except per cent by weight, the position would be automatically clarified and hydrogen peroxide would be brought into line with other oxidizing agents, including other peroxy compounds.¹

The following table by Slater gives the specific gravity of solutions in the range of general industrial use:

| H_2O_2 g/100 g | Specific gravity. | Popular description |
|-----------------------------------|----------------------|---------------------------------------|
| 3.01 | 1.009 | 10 vols. |
| 5.95 | 1.020 | 20 vols. |
| 27.52 | 1.1032 | 100 vols. or 30 per cent by volume |
| 35.32 | 1.1365 | 40 per cent by volume |

CONTROL OF OXYGEN RELEASE

Although hydrogen peroxide already finds considerable application in cosmetics, I feel that these uses could well be extended if the stability-oxygen release mechanism were more widely understood and taken into consideration in practice. Additional stability is imparted to H_2O_2 solutions by reducing their pH value (i.e., by adding acids); by ensuring the absence of traces of metallic catalysts such as platinum, copper, manganese and iron; by including traces approximating to 0.01 per cent or less of organic stabilizers such as acetanilide, salicylic acid, aspirin, phenacetin and antipyrin; and by keeping the temperature of the solu-

tion at not higher than 25 deg. C.

Hydrogen peroxide solutions, as obtained from reliable sources, are nowadays remarkably stable, chiefly due to improvements in manufacture and freedom from catalytic impurities. Thus low-strength qualities, as normally utilized in cosmetic preparations, show a loss of not more than 1 per cent after the lapse of one year, while some of the specially prepared higher strengths, e.g. 30 per cent H_2O_2 , show an even lower rate of loss.

DECOMPOSITION

So much for stability. What is required, however, in so far as the action of peroxide solutions is concerned, is controlled rate of decomposition. In actual use, then, the probability conditions outlined above are put into reverse. Let us first of all consider the effect of altering the pH. Kept at a pH of 5, solutions will last for a year or so with very little deterioration, whereas an equivalent loss occurs after 4 months at a pH of 6-7 or after 3 weeks at a pH of 10. In short, the addition of alkalis decreases the stability and promotes activity. The effect of raising the temperature also increases activity—between 40 deg. and 50 deg. C. being the critical temperature range at which the peroxide shows marked increase in activity, even in the presence of stabilizers.²

Sodium silicate and sodium pyrophosphate are good stabilizing agents for peroxide solutions under certain conditions, but here as always the technology of utilizing hydrogen peroxide lies in achieving the desired degree of activation consistent with minimum loss of available oxygen and freedom from attack of the material under treatment (e.g. the hair or skin). In the case of wool bleaching, for example, the bleaching bath, if adjusted with caustic soda alone, will be both active and unstable. If, however, sodium pyrophosphate is used, then the bath will be active but relatively stable. It is possible to increase the activity of the peroxide bleaching bath, and so to reduce the time, by increasing both pH and temperature where the material is suitable for such conditions, as, for example, in bleaching cotton. The pH here may be as high as 11 and the temperature about 100 deg. C.¹

On the other hand, in the hydro-

gen peroxide bleaching of hair, ammonia cannot be replaced by sodium pyrophosphate as the bleaching solution would not then be sufficiently alkaline. Furthermore, the ammonia has a softening effect upon the hair and permits better penetration of the peroxide.

The cosmetic chemist thus starts off with a good grade, reasonably stable product. His further use of it is determined for each particular purpose by the judicious control of oxygen release or the balance between stabilization and activation. For most purposes, as distinguished from hairdressing practice, he requires the peroxide to be potentially active but stable. Furthermore, if he requires a peroxy compound miscible with organic solvents, such as benzoyl peroxide, or a high strength peroxide dispensable in convenient tablet form, such as urea peroxide, then he will have recourse to these and other compounds of the same group—which for the sake of ready reference are briefly listed below.

APPLICATIONS OF H_2O_2

Before listing these interesting derivatives, however, a few words should be said regarding the existing applications in cosmetic manufacture of hydrogen peroxide. The most widespread use comes more precisely within the scope of the hairdresser. I refer of course to the bleaching of hair. In England the standard practice is to utilize the normal 10 volumes (or 3 per cent w/w) solution, together with a little ammonia to enhance activity and promote penetration. Sometimes, but rarely, a 6 per cent or 20 vols. ammonia is employed. The usual practice in the U.S.A. appears to consist in the application of 5 per cent or 17 vols. peroxide, to which is added about 20 drops of ammonia for each fluid ounce of peroxide.³ Ammonia is also considered to brighten up the red tones. Other factors besides strength of solution that affect the final intensity of bleaching are: operating temperature, action of light and air, and the number and total duration of dippings.

It is common practice to apply the peroxide in a paste vehicle, especially in applications of prolonged duration. Here use is made of the so-called "white henna," namely magnesium carbonate in association with

peroxide and ammonia. Less frequently the bleach paste consists of magnesium carbonate and sodium perborate. The addition product, urea peroxide, has also its supporters for use in this connection.

The subsequent treatment of bleached hair with color rinses (bluing, etc.) and "reconditioning" creams based on wool wax emulsions or liquid reconditioners, consisting of cholesterolated vegetable oil, are rather outside the scope of this paper and can only be referred to in passing.

PACKING BLEACHING CREAMS

Bleaching creams, properly formulated with a view to ensuring stability as outlined above, are capable of withstanding a protracted shelf life of many months without undue loss of potency—or even years without promoting rancidity or other decomposition within the cream base. They do need to be expertly prepared, however, and are best packed in amber or blue glass jars, with a degree of heat insulation afforded by an appropriate carton. Such creams are marketed for their antiseptic effect and for their supposed ameliorating action on skin blemishes.

More concentrated solutions or pastes of the hair bleaching type are widely utilized, despite their irritant character, as depilatories for removing superfluous hair from the face, arms and legs. This practice, in common with finger nail bleaching, etc., is naturally of greater interest to beauty salon operators than to cosmetic manufacturers.

EFFECTIVE AS A BACTERICIDE

Hydrogen peroxide as a bactericide is chiefly effective against anaerobic bacteria. Together with its derivatives, it finds application in dentifrices, mouth washes, etc. Another notable application of the peroxy compounds is as deodorants. Finally, one of the most interesting uses of peroxides is as oxidizing-developers in the aniline derivative hair dyeing process. Other industrial applications include the making of soluble starches, the bleaching of fats and waxes, and laboratory uses as analytical reagents.

It is interesting to note that certain phenolic derivatives are very stable to hydrogen peroxide, e.g., anethole, eucalyptol, thymol. This

may be taken into account when perfuming peroxide-containing cosmetics.

CONVENIENCE OF UREA PEROXIDE

An increasingly important addition compound of hydrogen peroxide is urea peroxide, a fine white, odorless crystalline substance containing approximately 35 per cent H_2O_2 . This rapidly decomposes in water, giving a clear solution of hydrogen peroxide and urea.

Urea peroxide is free from mineral acids, and is stable under all climatic conditions. Its other merits are derived from its solid form, and its high content of hydrogen peroxide. Its high concentration of hydrogen peroxide makes it convenient to carry. Its solid form adds to its simple portability. There is no risk of leakage from container, as there is in the case of a solution. Ideally adapted for tableting, it may be compressed, for example, into 8-grain tablets, which give a solution of two volumes strength, when dissolved in 1 fl. oz. of water. Two such tablets provide a solution of 4 vols. strength—and so on.

Urea peroxide has been suggested as a useful, convenient material for use in the bleaching of hair, treatment of freckles, a 3 vols. solution as an eczema poultice constituent, and as a healing agent for use in chilblain and other foot treatment preparations; also as the basis of mouth washes, and particularly as a convenient means of marketing hair dye developers. To illustrate the latter application, I quote the following formula⁴ for a black hair dye:

p.—Toluylene diamine 5 g.
p.—Amino Diphenylamine 5
Sodium sulphite, cryst. 10
Alcohol (50 per cent) to 100 cc.

Urea peroxide is probably of greater potential importance in cosmetic manufacture than any other oxygen-releasing compound. For the sake of completeness, the other products of this class of actual or potential interest to cosmetic chemists are listed below, together with some brief notes on their application.

OTHER PEROXY COMPOUNDS

Of the peroxides of the alkaline earths (barium, strontium, calcium, zinc and magnesium), the barium salt is the most stable, but is obviously not of interest in cosmetics.

Magnesium and calcium peroxides, though much less stable (around 5 per cent loss in a year) nevertheless find some application in dental preparations. The stabler zinc peroxide is a useful constituent of bleaching salves, toilet powders, etc.—and is employed dermatologically for its slow release of oxygen over a prolonged period. As a bleaching agent and deodorant, zinc peroxide is frequently found in foot powders, deodorant powders and facial clay powders, and is most satisfactorily utilized in non-aqueous preparations.

The persulphates have little to recommend them for cosmetic use. The unpleasant taste prohibits the use of sodium persulphate, for instance, in dental preparations.

SODIUM PERBORATE

Sodium perborate is the most useful of the peroxy hydrates. Its correct formula, incidentally, is $NaBO_2 \cdot H_2O_2 \cdot 3H_2O$, while that of the carbonate is $2 Na_2CO_3 \cdot 3H_2O$. Sodium perborate, a white free-flowing crystalline powder, with a minimum of 10 per cent active oxygen, is stable at normal temperatures and moderately soluble in water (its solubility increasing in acidic solution). It is useful in oxygenated tooth powders and pastes, in face packs (less than 1 per cent), bath salts and foot powders. Because sodium perborate, magnesium perborate and peroxide, and all the other compounds of this class release oxygen on contact with water, some vehicle other than water should be utilized when incorporating them. (For water-base tooth-pastes, potassium chlorate has been

Bottle No. 1 contains 10 cc. of this solution.
Bottle No. 2 contains 4 tablets of 0.5 g. urea peroxide.

Contact time: 1 hour.

suggested, but when using it care must be taken to work it up in the wet state in order to avoid the risk of detonation.) Sodium percarbonate has been used as a substitute for sodium perborate in oxygenated washing powders. It has an approximate content of 13 per cent active oxygen.

BENZOYL PEROXIDE

Of the organic peroxides, the only one deserving attention here, apart from the urea peroxide addition product already referred to, is benzoyl peroxide, $(C_6H_5 \cdot CO)_2O_2$. Being

non-aqueous and miscible with organic compounds, benzoyl peroxide has aroused considerable interest as a bleaching agent for oils, fats and waxes and as a catalyst in plastics manufacture. I can foresee some interesting applications for this compound in foot salves, lip salves (against *herpes labialis*), bleaching creams, etc. Its use has, in fact, been noted in the literature on ointments.

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- ² Folgner & Schneider. *Melliand Textilber.* 14, 452, 1933.
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- ⁴ Winter, F. "Hair Dyes." *Soap, Perfumery & Cosmetics*. December, 1938.

Letter to the Editor

Editor of The AMERICAN PERFUMER:

You are to be congratulated on publishing the excellent review on the Chemical Nature of the Violet Odor by Dr. Everett Saul. This series of articles covers the wide range of Organic Chemistry connected with the Ionones.

However, I would like to call attention to a few minor points. Near the bottom of page 115 (AMERICAN PERFUMER, Oct. 1945) the heading reads: Structural Formula of Ionone Finally Settled. This refers to the work done by Professor Bogert and myself and has to do with the hydrocarbon Ionene, derived from the ketone, Ionone. Further on, Dr. Saul states that the formation of Ionene was postulated as a simple dehydration of beta-ionone but it would be more correct to describe it as a case of cyclodehydration, since in addition to the loss of the elements of water, ring-closure takes place forming ionene, which we established is of benzenoid structure.

Victor G. Fourman,
President,
Syntomatic Corporation

(Editor's note: The last installment of Dr. Everett Saul's article, The Chemical Nature of the Violet Odor, appears in this issue.)

Short Adages

by R. O'MATTICK

Long before the days of jumbo lipsticks, cake make-up, liquid stockings, cream colognes, et cetera, et cetera (if our historical memory serves), in 1811, to be exact, the name of West Road in New York was changed to Sixth Avenue. And now this old thoroughfare is to have a new name again—Avenue of the Americas! There has been some objection to the change. New signs will have to be made and firms on this street will have to print new letter-heads, new shipping labels and what-not. But the Sixth Avenue Association, which from now on will be the Avenue of the Americas Association, welcomes the new name and the event has been duly celebrated. Sixth Avenue—pardon us—Avenue of the Americas has seen many changes in

But we predict a great future for Avenue of the Americas as soon as reconversion gets under way. Many of the old and dreary buildings will come down and new ones, with elegant shops, will take their places. The Avenue of the Americas will be the Fifth Avenue of the future and rumor has it that some of our leading perfume and cosmetic houses are already looking around for new homes for their products on the Avenue of the Americas.

We, who have given away, without charge, million dollar ideas before (which is the chief reason that the cost of a subscription to THE AMERICAN PERFUMER pays for itself many times over), now donate this flash of genius to our readers. Rue de la Paix and Bond Street and Fifth Avenue have been names dear to the cosmetic world! Now is the time to get the thing registered: Avenue of the Americas Red—the newest shade for lipsticks, or Avenue of the Americas cologne, A.O.T.A. dusting pow-

house to which they never gave a chance to supply them with anything . . .

As for the long distance telephone stoppage, the offices in New York were not taken up with calls from Kentucky, Colorado, California and other distant places, so they had a little time to talk to their customers right here in New York!

Dr. Rowmaterial, who is, in addition to everything else, a keen psychologist and a deep student of human behavior, used these few hours to put through many local calls and in this way was able to obtain, during these two hundred and forty minutes, more sandalwood oil, vanillin, and other ingredients than he had been getting in the previous one hundred days and nights.

There is no news about Pat Chouli, Otto Stock, Sand L. Wood, A. Good-buy or Cory Ander, who left a week ago to go on a two day golf trip. Any information about their whereabouts from any of our readers will be greatly appreciated.

When the days toward the approach of V-J Day were coming and going, we began to think of changing the name of our column. The name Short Adages was originally inspired by a play on the word shortages during the days when one heard nothing at all but the shortage of this and the shortage of that. We were just getting ready to settle on the new name of Abundances when the shortages continued and so we decided to continue the name Short Adages. Meanwhile we want to prepare for a sunny day when there will be no more shortages of anything. So if anyone has any suggestion for another name for that not-too-far-off time (we hope), please send it to R. O'Mattick, c/o THE AMERICAN PERFUMER, 9 East 38th Street, New York, N. Y.

There is hardly a columnist living who does not use the space for the month of November to write about Thanksgiving and turkeys and what we ought to be thankful for year after year.

We are thankful this year for so much that we bow our head low and wish to avoid writing about it merely to help fill our column!



"Just one dab behind my left ear—
This perfume is terribly expensive!"

its day. First, the horse drawn trolley cars rumbled along its stones, then the electric trolley which finally gave way to buses, and the elevated, which is no more. Sixth Avenue began to go places when the war came along and then things stopped happening to its improvement.

We do not own any property on Sixth Avenue—nor for that matter on any avenue, street, highway, alley or drive. Our ancestors being poor but pious folks, thought it wrong to take land away from the Indians.

der or whatever else you wish. Step right up, folks—ten shots for only a dime!

The long distance telephone stoppage and the six day elevator strike in New York had their divers results on our friends in the essential oil business. Many thought better of it than to walk up five flights of stairs or ten or, worse yet, twenty-seven to find out if they could get any patchouli oil or musk ambrette from their supplier, let alone from the

A Survey of Spanish Essential Oils

Labor in Spain permits low cost production of pennyroyal . . .

Oil of pennyroyal is a source for manufacturing synthetic

menthol . . . The chemical composition of oil of pennyroyal

by DR. ERNEST GUENTHER

Chief Chemist, Fritzsche Brothers, Inc., New York, N. Y.

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OIL OF PENNYROYAL

Mentha pulegium L., var. *eriantha* (according to Holmes¹) grows wild and abundantly in the more humid and low regions of southern Spain (Andalusia—province of Málaga, Cadiz, Sevilla and Huelva) and is distilled while in bloom during the summer months.

DISTILLATION

Distillation of pennyroyal takes place in field stills as described under Spanish Oil of Spike Lavender. In the case of pennyroyal the stills are usually 2 m. high and 1.6 or 1.8 m. wide, holding 70 or 90 arrobas (1 arroba = 11.5 kilos or about 25 pounds) of plant material. Distillation of one batch lasts altogether (including charging, etc.) about six hours when 190-240 liters of water have been distilled over.

YIELD OF OIL

The yield of oil from Andalusia pennyroyal amounts to approximately 1 per cent (8-9 arrobas of plant material yielding 1 kilo of oil). This type of oil is the best produced in Spain, having a pulegone content of usually not less than 92 per cent.

Another and potentially very large producing region was opened in Morocco only a few years previous to the outbreak of World War II. There, *Mentha pulegium* var. *villosa* Benth (according to Miegé²) also grows wild and abundantly in several regions of the Riff Mountains, and Mid-Atlas and the Saharan Atlas. The yield of oil varies between 1.25 and 2 per cent according to locality

and season. The best oils originate from the regions Beni-Mellal du Tadla and Boulhaut.

No pennyroyal plantations exist in Spain or Morocco. The low labor cost prevailing in those countries, especially in Morocco where distillation of oil of pennyroyal is almost a family or tribal industry, permits production of the oil at very low prices. Women and children collect the wild growing plant material and carry it to portable stills operated by the men. Obviously, the United States could never hope to compete with such a system and, therefore, efforts to produce the oil in this country by utilizing wild plants are doomed to failure. Domestic producers will have to overcome the handicap of high wages by growing pennyroyal on regular plantations and by utilizing machinery for planting and harvesting.

PHYSICO-CHEMICAL PROPERTIES

Shipments of genuine pennyroyal oils received by Fritzsche Brothers, Inc., from Spain and Morocco during the past years had properties which varied between the following limits:

| | |
|-------------------------|--|
| Specific Gravity at 15° | 0.936 to 0.944 |
| Optical Rotation | +15°18' to +23°48' |
| Refractive Index at 20° | 1.4829 to 1.4877 |
| Pulegone Content | 85 to 96% |
| Solubility | Soluble in 4.5 to 5.5 vol. of 60% alcohol, clear to hazy with more; occasionally opalescent to hazy in 4.5 to 5 vol. and more. |

Naves³ recorded these properties

for oils distilled exclusively from true *Mentha pulegium* L. growing in the low coastlands of Andalusia:

| | |
|--|------------------|
| Specific Gravity at 20° | 0.932 to 0.936 |
| Optical Rotation | +18°0' to +23°0' |
| Refractive Index at 20° | 1.483 to 1.488 |
| Dispersion of Refraction ($n_D - n_C$) $\times 10^4$ | 126 to 132 |
| Ketone Content (Neutral Sulfite Method) | 87 to 96% |
| Ketone Content (by oximation) | 87 to 94% |

According to Pinel⁴ Moroccan oil of pennyroyal is distinguished by a high pulegone content, its properties ranging between these limits:

| | |
|-------------------------|--|
| Specific Gravity at 15° | 0.939 to 0.982 (occasionally 0.932 to 0.945) |
| Optical Rotation | Around +16°30', occasionally up to +22°33' |
| Refractive Index at 20° | 1.487 to 1.494 |
| Pulegone Content | 89 to 97% |
| Solubility | Soluble in 1.5 to 2 vol. of 70% alcohol. |

The content of pulegone, the principal constituent of oil of pennyroyal is usually determined by the neutral sulfite method. Since pulegone does not react readily with sodium sulfite the assaying should be carried out with a hot neutral sodium sulfite solution and with shaking on a boiling water bath for four hours. However, the values thus obtained will not represent only pulegone but include also certain other carbonyl compounds present in the oil.

Naves⁵ suggested that a careful analysis of pennyroyal oil should comprise the determination of the specific gravity, optical rotation, re-

fractive index, dispersion n_F-C , ketone content by both the neutral sulfite method and by oximation, and fractional distillation. Special importance should be given to the dispersion of refraction as determined by a Pulfrich instrument. The different ketones behave differently with a hot neutral sodium sulfite solution (continual shaking in a boiling water bath for three hours). Menthone and isomenthone are practically without reaction, while piperitone reacts more slowly than pulegone.

SYNTHETIC MENTHOL

When during World War II Europe was cut off from its supply of Japanese menthol and also from Java citronella oil, starting material of synthetic menthol, Central European industry, especially German and Swiss, resorted to oil of pennyroyal as a neglected yet convenient source for the manufacture of this important synthetic. Because of this sudden and heavy demand for oil of pennyroyal which formerly had served mainly for the scenting of soaps, production of this oil in Spain was largely increased and new regions were opened along the limits of the provinces of Cordoba, Huelva, and in Extremadura near the Portuguese frontiers. These higher and dryer regions, however, offered entirely different climatic and soil conditions which resulted in a much lower yield of oil (0.22 per cent, or 40 arrobas of plant material per kilo of oil) and in an oil of different composition and quality. Those new oils contained less pulegone and apparently more 1-piperitone and 1-menthone than the normal oils produced in the lowlands of Andalusia. Mr. Ramon Bordas,⁶ a large and experienced producer in Sevilla, ascribes this divergence in the composition of these new oils to the possibility that the plants growing in the higher altitudes of Cordoba, Huelva and Extremadura are in reality a form of *Mentha pulegium* L. var. *hirsuta* (Gussone) which grows in Sicily and yields an oil containing apparently a substantial percentage of piperitone and menthone.

A similar expansion of the production of pennyroyal oil took place in Morocco during World War II where owing to the urgent demand the plant material was often distilled pre-

turely or with insufficient care and experience.

As a result of this emergency many lots of oil of pennyroyal appeared during the war on the European market which were abnormal in regard to their physico-chemical properties and especially of subnormal pulegone content. For details the reader is referred to a study by Naves⁷ who classified these wartime oils into different groups. With the return of normal conditions these oils will no longer be produced and it, therefore, appears superfluous to include them in our discussion of normal oils.

CHEMICAL COMPOSITION

The ketone forming the main constituent of oil of pennyroyal was first identified by Beckmann and Pleissner⁸ and named pulegone. Other constituents of the oil were later described by Tetry,⁹ but the most thorough examination was undertaken only recently by Naves,¹⁰ and Naves and Papazian.¹¹ The following compounds have been identified in oil of pennyroyal:

pinene According to Naves.¹²

l-limonene and dipentene In the lowest boiling and strongly laevorotatory fraction b. 170-173 deg. Identified by Tetry¹³ as bromide m. 106-109 deg. The same compounds were also described by Naves.¹⁴

d-pulegone $C_{10}H_{16}O$ Beckmann and Pleissner¹⁵ found that about 80-92 per cent of the oil boils between 212-216 deg. and consists mainly of pulegone.

menthone Identified by Tetry¹⁶ as semicarbazone m. 184 deg. Naves¹⁷ observed only laevorotatory menthone in oil of pennyroyal.

d-isomenthone According to Naves,¹⁸ and Naves and Papazian.¹⁹

menthol Tetry²⁰ found that about 10 per cent of

the fraction b. 212-216 deg. consists of menthol which he identified as phenylurethane m. 111-112 deg.

The oil furthermore contains small quantities of the following compounds:

methyl- According to cyclohex- Naves.²¹ anone-(3) and methyl- cyclohex- ene-1-one-(3)

trimethyl- According to 1,1,3-cyclo- Naves.²² pentanone-(4)

¹ *Perfumery Essential Oil Record* 2 (1911), 254; 14 (1923), 235.
² Müller, *Parfumerie moderne* 32 (1939), 97.
³ Naves, *Helv. Chim. Acta* 25 (1942), 732.
⁴ *Perfumery Essential Oil Record*, Aug. 1944, 221.
⁵ *Ann. chim. anal. chim. appl.* 23 (1941), 289.
⁶ *Perfumery Essential Oil Record*, Aug. 1944, 221.
⁷ Private communication.
⁸ *Perfumery Essential Oil Record*, Aug. 1944, 221.
⁹ *Liebigs Ann.* 262 (1891), 1.
¹⁰ *Bull. soc. chim.* III, 27 (1902), 186.
¹¹ *Helv. Chim. Acta* 25 (1942), 732; 26 (1943), 162, 1034, 1002; 27 (1944), 52.
¹² *Ibid.* 25 (1942), 1023, 1046.
¹³ *Ibid.* 25 (1942), 732.
¹⁴ *Bull. soc. chim.* III, 27 (1902), 186.
¹⁵ *Helv. Chim. Acta* 25 (1942), 732.
¹⁶ *Liebigs Ann.* 262 (1891), 1.
¹⁷ *Bull. soc. chim.* III, 27 (1902), 186.
¹⁸ *Helv. Chim. Acta* 26 (1943), 162.
¹⁹ *Ibid.* 25 (1942), 732.
²⁰ *Ibid.* 25 (1942), 1023, 1046.
²¹ *Bull. soc. chim.* III, 27 (1902), 186.
²² *Helv. Chim. Acta* 26 (1943), 162.
²³ *Ibid.* 27 (1944), 52.

(Editor's note: This article will be continued in the next issue.)



Pennyroyal field distillation in Spain

Skin Hazards in Prolonged Cosmetics Contact

*The manufacture of cosmetics has few skin hazards . . . Dermatitis often occurs among those who use cosmetics . . . Measures can be employed to prevent occupational dermatitis**

by LOUIS SCHWARTZ

Medical Director, U. S. Public Health Service

THE manufacture of cosmetics has comparatively few skin hazards. In fact, as far as skin hazards are concerned, it is among the least harmful of all occupations. The reports of state compensation boards confirm this because they rarely list occupational dermatitis among workers in cosmetic manufacture.

DERMATITIS FROM COSMETICS

Medical literature has many references to dermatitis from cosmetics among those who use them, but there are very few references in medical literature to dermatitis among those who make cosmetics. Occupational dermatitis does occur and has been reported from the bottling of perfumes, hair preparations, nail lacquers, and cuticle removers. Bottling operations in large cosmetic factories are usually automatic, but the hands of some of the workers who fill, cap, or handle filled bottles become soiled with the liquids. The alcohol in perfumes tends to defat the skin; the essential oils and scents consist of terpenes, aldehydes, etc., are sensitizers in low concentrations. The alcohol solvent of the perfume carries the oils and scents into the skin, and favors sensitization.

Hair preparations are capable of causing occupational dermatitis. Hair tonics contain alcohol, phenols, and other antiseptics and perfumes, which may irritate the skin.

The "cold wave" solutions, especially the reducing solutions, can cause dermatitis among those who bottle them. The oxidizing solutions are peroxides or per salts and while they can cause dermatitis, they are

not as irritating to the skin as the organic sulphides and thioglycolates which make up the reducing solutions.

Among the hair dyes, paraphenylenediamine is the most notorious dermatitis producer. Dermatitis is fairly common among fur dyers using this chemical but it is rare among cosmetic manufacturers who make solutions of it for use as a hair dye.

Nail lacquers contain solvents (usually of the ester group) which can cause dermatitis by defatting the skin. The nail lacquers also contain dyes and resins which may cause sensitization dermatitis. Because nail lacquers are usually bottled by machines, occupational dermatitis is seldom observed from them, although dermatitis from nail lacquers is not infrequent among those who use them.

Cuticle softeners consist of alkali solutions, of either sodium or potassium hydroxide or carbonate, or of triethanolamine. They can cause dermatitis by softening and swelling the epithelium. Occupational dermatitis among those who make cuticle softener solutions is not frequent because the bottles are machine filled.

Depilatories consist of inorganic sulphides such as sodium, potassium or barium sulphides, and of the organic sulphur compounds such as calcium thioglycolate. They are reducing agents and alkalis, which soften and swell the hair, making it easy to remove by simply breaking it off by rubbing. The depilatories swell and soften the keratin and epithelium of the skin causing dermatitis by pri-

mary irritation. Depilatories are also but little handled by the workers in factories where they are made and hence cause but little occupational dermatitis.

Anti-perspirants consisting chiefly of solutions of aluminum sulfate or aluminum chloride can cause dermatitis if they are permitted to remain on the skin for long periods.

PREVENTATIVES AGAINST CONTACT

It is a fact that most of the bottling operations for cosmetics are done by machines and there is but little contact of the irritant chemicals with the skin of the workers. However, all possibility of contact can and should be avoided by furnishing workers bottling irritant chemicals with rubber gloves and impervious sleeves fastened over the gloves at the wrist, so as to prevent irritant solutions from entering the gloves. Impervious aprons should also be provided to prevent soiling of the clothes with chemicals which may soak through and irritate the skin.

Girls whose hands are soiled with irritant solutions should not use ordinary soaps for cleansing them because soaps may further irritate the skin, especially if there is dermatitis present. The management should provide superfatted vegetable oil cleansers for the use of such workers. These are much more mild in their action as irritants and yet are efficient cleansers. In addition to this,

* From Dermatoses Section, Industrial Hygiene Division, Bureau of State Services.

This is the second of a series of articles by Louis Schwartz. The third will appear in an early issue of THE AMERICAN PERFUMER.

girls whose hands are in contact with alkalis, solvents, reducing agents, etc., in the course of their work, should use an emollient cream or solution containing lanolin on their hands at night before retiring.

Workers in cosmetic factories should in addition be provided daily with clean white smocks and caps, for sanitary and aesthetic reasons.

BARBERS AND BEAUTICIANS

Dermatitis among barbers and beauticians is not infrequent. Reports of compensation boards of seven states show about 200 cases among 38,000 from all causes. The hair preparations offer the most skin hazards. Barbers' and hair dressers' dermatitis from constant wetting of the hands with medicated soaps, oils, and hair tonics was reported as early as 1928. Oxidizing hair dyes of the paraphenylenediamine group have been reported to have caused dermatitis not only among beauticians but among those who had their hair dyed. Indeed, there was so much allergic dermatitis attributed to paraphenylenediamine that in Germany its use as a hair dye was forbidden. Its use for hair dyeing is restricted in many of our states. In some states patch tests are required to be performed with it on those who are to use it, to see if they are sensitive. The patch test in this instance is not satisfactory and may even lull one into a false sense of security because the person only becomes sensitized several days after the hair is dyed. A patch test left on for 24 hours may show no reaction, yet several days after the hair is dyed dermatitis of the face and even of the body may develop.

The alcoholic content of hair tonics and perfumes has been reported to cause dermatitis by defatting the skin. The medicinal contents of hair tonics such as coal tar and resorcinol, and the essential oil and synthetic perfume content of perfumery have been reported to have caused allergic dermatitis.

Since the popularity of cold-waving there has been considerable dermatitis among hair dressers from the cold-waving solutions. The reducing solutions, usually a thioglycolate, not only soften and swell the hair, but soften and swell the epithelium of the hands of the hair dresser. The oxidizing solution which is used after

the reducing solution, while not as much of an irritant, has also caused dermatitis.

Medical literature in the last decade has reported occupational dermatitis among barbers and beauticians from the following preparations:

Bleach creams; boric acid in cold cream; colocynth (a denaturant for alcohol); depilatories (inorganic and organic sulfur compounds); dyes (mostly hair dyes); freckle removers (usually contain ammoniated mercury); javelle water (sod. or pot. hypochlorite); nail lacquers (solvents, dyes, and resins); perfumes (mostly the synthetic perfumes); soaps (mostly medicated), and tar compounds.

DIAGNOSIS OF DERMATITIS

The diagnosis of occupational dermatitis from cosmetics is not difficult. The history of the dermatitis shows that it began after the patient began handling some of the above mentioned irritant cosmetics; that the eruption began and is usually confined to that portion of the skin which comes in contact with the cosmetics, usually the hands, wrists, and forearms. When solvents, alkalis, and other primary irritants are handled the eruption usually affects the webs of the fingers and skin around the nails. The skin is red, usually moist and peeling. The lines in the palms are accentuated and the skin on the palms may be desquamating. In allergic types of occupational dermatitis the eruption is usually of the papular, vesicular type and on the sides of the fingers and on the back of the hands and on the wrists. The palms are usually not affected.

Patch tests are usually not necessary when the dermatitis is one of primary irritation. The history, site and type of the eruption, and the fact that it improves during a lay off from work, is sufficient to establish the diagnosis. In the allergic types of dermatitis patch tests are of value, but when patch testing with perfumes it is best not to use a covered patch test so as to permit the solvent to evaporate. If a covered patch test is used, a control patch with the solvent of the perfume should also be done in order to rule out the possibility of primary irritation by the solvent.

"Hardening" rarely occurs in occupational contact dermatitis from

cosmetics. The reason for this may be that there is not a sufficient amount of exposure to enable the body to develop a hypersensitivity.

TREATMENT OF DERMATITIS

The treatment of occupational cosmetic dermatitis is simple. Removal from work usually cures the dermatitis. Mild medicaments alleviate itching and discomfort and hasten the cure. Defatted, cracked, peeling skin should be treated with such ointments as boric acid ointment with a lanolin base; or zinc ointment. The vesicular oozing types of dermatitis should be treated with wet dressings of boric acid solution, or a one per cent solution of aluminum acetate, or a five per cent solution of tannic acid. After the vesicles break and the oozing ceases, mild ointments should be applied as suggested above.

The obvious preventive measure for occupational cosmetic dermatitis is that all barbers, hair dressers, and beauticians wear rubber gloves while using cosmetics containing potential irritants. The use of rubber gloves will not only protect from dermatitis, but if a fresh pair is used on each customer, it gives an atmosphere of cleanliness and sanitation to the shop or parlor, which is most desirable.

The wearing of impervious sleeves fastened over the gloves at the wrist will protect the arms and prevent irritants from entering the gloves. The gloves and sleeves may be sterilized by immersing in an antiseptic solution for ten minutes, rinsed in sterile water and allowed to dry. Wearing light rubber gloves, sleeves and aprons made of transparent or translucent plastics such as vinylite, plicofilm, or cellulose acetate, imparts a clean and neat appearance to the operator.

In addition to such protective clothing, operators who frequently use alcoholic solutions or alkalis on their hands in the course of their work, should use superfatted sulfonated vegetable oils instead of soaps to cleanse their hands and they should anoint the hands with an emollient cream containing lanolin.

These subjects are discussed in more detail in a book "Cosmetics and Dermatitis," by Schwartz and Peck, which is now in print.

The title of the next paper will be "Dermatitis Among the Users of Cosmetics."

Cosmetic Trends in the Middle West

Sales of steadily priced perfumes mount into higher figures than in pre-war days . . . Face powder shows a marked upward turn over cake form

by JEAN MOWAT

CHRISTMAS has taken on new meaning for the buyers of perfumes and cosmetics. While it is always a heavy selling season, this year, in addition to being the big holiday event and Christian celebration, Christmas must also bring up the sales totals in a good many middle western stores.

Any one in the business world knows any woman given a chance at a real bargain will all but buy her head off. That has been the case this fall. Firm after firm has offered its lines at anywhere from \$1 off to half price. Women have stocked up and through this means have more than saved the luxury tax. But it has cut deep into the total of the store's volume for the last quarter. The start has been poor and now the buyers are wondering about the future.

Once upon a time it was conceded that a sale of any item was an excellent way to move slow movers. But the toiletries firms, so buyers tell us, have been outdoing themselves in this and have apparently, for the moment, over-extended sales. In fact one buyer said that these companies were killing the golden goose that made profits possible.

PERFUME SALES HOLD STEADY

The perfume makers have held their prices steady and not followed the lead of the cosmetic people. The result is that sales are slowly but surely mounting into higher figures than in pre-war days. Not only is it fashionable to wear a scent for different occasions and times of the day but it is a more fragrant and lasting perfume that is sold. "These are skin perfumes" was the way one buyer put

it in making a sale to a man who wanted something very de luxe to take home after attending a convention. He was curious. The buyer explained that they have found it much better to call it this than to say it is an essence, for then a woman will put it on the skin—and presto she achieves a distinctive odor—that of the essence plus the body aroma.

PERFUME ENSEMBLES SELL

Perfumes continue to be leaders in many stores and with the release of alcohol to the makers any number of new scents may be expected. One store reports that its average sale begins at \$10 in Chicago. Wasson's of Indianapolis have been making a feature of its dram perfumes from \$1.25 to \$3 and Kern's of Detroit offer a selection of delicate scents at \$5 to \$110. Dayton's of Minneapolis suggests that when a selection of a perfume is made a matching cologne be chosen for the day-time hours. The store has even put up packages to accent the theme of perfume-ensemble.

DRUG STORE DISPLAYS

Chain drug stores which have usually put even the kitchen stove in the window are fast changing over into the Fifth Avenue class of display. Several—rarely more than two or at most three—competitive brands are shown, and in approximately the same price range so that a woman really has a chance to make a good selection.

Since these stores have been giving their salespeople special training the present displays are in line with the work that has been done in the

store-school. The holidays will show how well the lesson of intelligent selling has been done as a result of the training.

HOLIDAY PACKAGES UNCHANGED

Buyers who have been in the markets report that little change will be seen in packages for the coming holiday season. Some of the "chiffings" that were on restricted use and therefore kept in storage may be used merely to reduce this inventory but they are so small that not a buyer in this section anticipates much, if any, change in the packages. Some lovely effects are being offered and as the war workers, who had little time for selective shopping, are now drawing their unemployment funds they are purchasing these packages and are creating an entirely new group of consumers for finer perfumes.

Only packaged goods are handled at Peacock's, Chicago, which is the latest addition to the perfumer purveyors of finer types. After its formal opening announcement of the "dazzling new parfumerie," with a sketch of the section as well as names of famous makers, it has kept sales at a higher scale than was expected by using a 75 line ad on 2 columns three times a week and featuring a different brand each time.

PERFUMES FOR JUNIORS

So varied in type are today's fragrances that they range from a medium floral to the heavy types, which are suggested for formal wear. The addition of perfumes for juniors in the 7-14 class continues to prove that this has been a smart idea. Women's pages throughout the middle Western

area are now carrying articles on these and stressing the smartness of these odors in cologne and a junior-type perfume as ideal for gifts.

COSMETIC FEATURES

Not in many months has there been such a vast amount of space given to the presentation of lipsticks and nail polish with matching color in lipstick. These are offered in half page ads by such leaders as The Baker Co. and Powers, both of Minneapolis. Wasson's of Indianapolis is another store that lays much stress on these ideas as has Marshall Field & Co., Chicago. The number of stores using quarter pages covers the entire middle western leaders. Many of the ads are own-store layouts and therefore have smartness that is often missed when a national mat is sent out. The store, naturally, follows its usual policy of presentations.

The sales on treatment creams, either one or two types has been too good for the closing days of the year, as women laid in a stock to carry them through the winter. Where the firm making the special price item offered an ensemble kit sales were even higher. Women are learning to purchase finer merchandise and select types that really are designed for their individual skins—and the sale prices have been highly attractive.

Now that a number of leading stores, which have had certain types of cream made to their own formula, are again able to have packing done, some inroads may be made on the national lines but only after clever selling. Yet the leaders in this field have long established reputations and will do a nice business on their own, for this field is already totaling larger figures than pre-war sales.

RETURN TO POPULARITY

The first important item to return to post-war popularity is face powder which has shown a marked upward turn over that of the cake-form. Part of this may be due to cooler weather. A great deal more is due to the pages of advertising, both national brands, and local store presentation that has made this a high style note. A few drug chains find that cake-powder is steady. Stores catering to the school and college trade report it is moving in larger sale units. So between the sales made on regular powder and the cakes there

is a marked improvement in business.

Several stores, and some of the beauty consumer columns have presented the idea that a soft powder, deftly applied makes a woman look younger. This is a pertinent selling point and it never misses.

Any type of cream that has the word or suggestion of gland in it seems to carry the thought of YOUTH and women buy it as they do bread. Perhaps some day a smart maker of cosmetics will arrange with a buyer to have a school for women to learn how to use these creams. Some of the firms have these in their own local quarters but the price is higher than the average home budget will stand. The average clerk is too busy making sales to take a half hour to explain and demonstrate how to apply a cream, or how to remove it. Some few firms that have house-to-house representatives are reaping a neat harvest from this idea for these women will spend two or three hours in working out the right shades, and showing a woman just how to use the preparations. After that she merely makes a call to check on how they appeal to the women, and usually has a repeat order. It's nice business.

COMING TRENDS

Winter has not been a time when large sales were made in deodorants. Some buyers who have built up a good sale are continuing to stress these as even more important now than in summer and Des Moines is one of the first cities to begin this promotional selling.

The return to the hosiery counters of nylons—when and as they come in—will put more women into sheerer hose than in some time. Several cities are using both national and store advertising to stress the smartness of hair-free legs. This is a promotion that stores ought to recognize as a "must" for the nylon wearer.

Kansas City has been giving some smart advertising space to the return of mascara and eye shadow. The return is good for business but as these have been an extinct item a good many women will need help in proper application or they will come out with a black eye.

Water softeners, delightfully fragrant in many odors, and "chiffed" with great big ribbon bows in contrasting colors to that of the softeners are in for a heyday of selling

this winter. Soaps to match in color is an added feature at Chas. A. Stevens & Co., Chicago.

Hand and wind lotions as well as oils for the bath are moving into popularity again and at prices easily within the reach of all. Men's finer toiletries are gaining more and more space in leading stores as men returning from the wars want these which they have missed so long.

COSMETIC BAR

A "Match Bar" at The Fair has proved to be one of the most important assets the store has ever installed. There are four sides or counters smartly equipped with mirrors. A dozen women can do their matching in both day and artificial light and come out with the correct shade. It has increased business greatly.

Watch the results of the success-plan which Younkers of Des Moines has installed to improve face, figure and fitness. It may have a far reaching effect. Not only is a chart needed for such a program but consultations must frequently be held. Some women still want to wear the same colors they did when they were in school. Any program, sponsored by any reputable company, that can give women a new viewpoint, will enhance their own standing and up the sales of their products.

A SELLING THEME

Mandel Brothers, Chicago, clips all of the write-ups about any item in the department and puts it on a poster stand in the section, and it makes blow-ups of many of the ads. These arouse interest and often create a sale for the girl who encounters a "just looking" customer. These are the most vulnerable for a sale and also for repeats. Too many women glance through a newspaper for their favorite columns and pass by these ads telling of the new ideas or else they merely do not register. A poster card will register.

Carson Pirie Scott & Co., has placed the most alluring perfume packages in the windows where formal attire is shown and the message is told without words. Many sales have been made directly from the window and many women have come into the perfume department remembering they needed a new bottle of fragrance.

Technical Abstracts from Scientific Literature

These brief abstracts listed provide a convenient key to current scientific literature of the world on perfumes, cosmetics, soaps, dentifrices and other preparations

Retardation of Rancidity by Sulfhydryl Compounds. Paul Gyorgy, Eric T. Stiller and Martin B. Williamson. *Science*, **98**, 518-20, 1943. Experimental results indicate that sulfhydryl compounds by virtue of their free sulfhydryl radical, retard the development of rancidity in fat, but only in the presence of water and in the absence of Copper and Iron. (Through *C. A.*, **38**, 655, 1944.)

Triethanolamine Soaps. P. Hardy. *Teintex*, **6**, 186-7 (1941); *Chem. Zentr.* 1941, II, 2634. Triethanolamine soaps of higher acids, such as oleic, stearic and ricinoleic, are discussed. Com. triethanolamine contains 75 per cent tri-, 20 per cent di-, and 5 per cent monoethanolamine. Suggestions are made for the analytical supervision of the saponification by the determination of the neutralization number of the acids and the titration of the amine. (Through *C. A.*, **38**, 2518, 1944.)

Bactericides Fungicides and Emulsifying Agents. U. S. 2,210,789. Salts of linear polymers having a number of trivalent nitrogen atoms as integral members of the linear chains (at least 2 valences of the nitrogen atoms being linked to carbon atoms), and also having a lateral imino group which carries a hydrogen atom and is attached to one of the chain carbon atoms directly attached to a chain nitrogen atom (the carbon atoms carrying the imino group being attached by one valence bond to another chain carbon atom and separated from each other by at least 4 linear atoms exclusive of the chain nitrogen atom), are prepared by adding quickly, with cooling, an equivalent amount of a primary or secondary amine to a solution or suspension, in an inert solvent for at

least one of the reactants (e.g., methanol), of a highly purified diimino ether salt of a hydrogen halide of a molecular weight of at least 36 and which has at least 4 chain members between the carbon atoms carrying the imino groups. The reactants are preferably cooled to 0°C. before they are mixed, the solution then being dissolved and then allowed to stand at about 25 to 30°C. for several hours, shaken until the imino ether salt has the solvent then distilled off and the product dried, preferably in vacuo. The products are, in general, very hygroscopic solids, soluble in water and in alcohol, but insoluble in benzene ether, chloroform and petroleum ether. Details are given of the production of a number of such compounds. (Through *J. A. Ph. A.*, **33**, 149, 1944.)

A Note on Glycerol Substitutes. Frank Atkins. *Pharm. J.*, **151**, 122 (1943.) The aqueous holding powers of a com. glycerol substitute, of the British Pharmacopoeal Codex substitute, of glycerol itself, liquid glucose and 70% sodium lactate were studied. Only the sodium lactate resembled glycerol in this capacity and the mucilage type of substitute has none of the water-holding powers of glycerol. (Through *C. A.*, **38**, 618, 1944.)

An Outbreak of Dermatitis From Hair Lacquer. Louis Schwartz. *U. S. Pub. Health Repts.*, **58**, 1623-5 (1943.) Undoubtedly the synthetic resins consisting of a combination of the maleic anhydride and rosin were the actual cause of the dermatitis although the alkalinity of one of the products (pH 9) and the strong acidity of the other (pH 3) aided the penetration of the resin into the skin. (Through *C. A.*, **38**, 582, 1944.)

Detergent Compound. U. S. 2,334,517. Water-soluble surface-active amines of high molecular weight are formed by the reaction of tetradecyl glycidyl ether with diethanolamine, or that of lauryl glycidyl ether with monoethanolamine, or other similar reaction.

A Method for Studying the Effect of Antioxidants on the Oxidations of Aqueous Suspensions of Unsaturated Fatty Acids. A. Banks. *J. Soc. Chem. Ind.*, **63**, 8-13, 1944. The rapid oxidation resulting from the addition of small quantities of haematin to suspensions of linoleic acid in buffered 2% starch solution can be measured by using the Warburg or Barcroft technic at 30°C, and this procedure has been adopted for the rapid testing of antioxidants. Evidence is produced to show that the initial stage of the oxidation is not catalyzed by the haematin. The results of tests, therefore, refer to the action of antioxidants on the spontaneous oxidation of suspensions of linoleic acid at 30°C. Numerous substances have been tested, and certain dried flower petals, logwood extract, haematoxylin, haematein, brazilin, and the usual antioxidants have been found to be active antioxidants for the system. Preliminary tests have shown that compounds containing a carboxyl, keto-, or R. CH (OH) group are not good antioxidants. (Through *Oil & Soap*, **21**, 155, 1944.)

Automobile Polish. Ger. 731,353. Hot petroleum is mixed with 3% of a liquid wax and a small quantity of alcohol is added. Water is mixed with approximately 3.5% of the mixture and this is used for polishing the lacquered parts of an automobile. (Through *C. A.*, **38**, 603, 1944.)

Packaging

PORTFOLIO

HATTIE CARNEGIE

HATTIE CARNEGIE: A fresh verbenia scent, for the well-groomed man, comes in a crystal-clear bottle with a smooth, walnut stopper. Hattie Carnegie presents the new Men's Lotion in a masculine, brown tweed box.



DUNCAN STORM

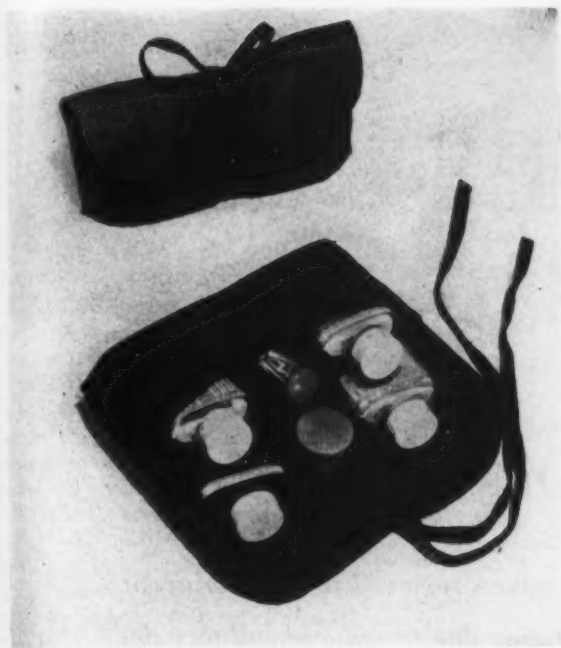


DUNCAN STORM: A new line of men's toiletries, Cargo, has been launched by Duncan Storm. The fragrance is crisp and fresh. Packaging is definitely on the masculine side, using glossy earthenware jugs of a deep cordovan shade, topped with crimson plastic caps bearing a compass dial emblem. The product name is lettered on a background which suggests shipping and travel. Gift set boxes, for two to six items, are of deep brown. They are decorated with tropic isle art-work in several colors.

RICHARD HUDNUT: The unusual Clarion tube package is designed in blue, red and gold. The metal-cased Hudnut Clarion lipstick fits into the tube at left, and is topped by the smaller tube containing Clarion face powder.

RICHARD HUDNUT





DERMETICS

DERMETICS: All the requisites for "doing the face over" are offered in the clever Charm Desk Kit by Dermetics. The bright, sturdy felt kit, when tied with its felt bow, can be stowed-away in a drawer. The kit comes in three colors—red ink, blotter green, and carbon blue.

HELENA RUBINSTEIN: A new Lipstick Wardrobe has been designed by Helena Rubinstein for all-occasion lipsticks for all hair-types. Four lipsticks, selected for individual color-type, are presented in a flat, ob-long, felt case along with a chart of colors for make-up and fashions.

PRINCE MATCHABELLI: In both fragrance and packaging, Matchabelli's Holly Berry catches the Christmas spirit. Red letters, berries and bow add to the colorful green and white striped box. The bottle of cologne bears the Matchabelli crest.

HELENA RUBINSTEIN



PRIMROSE HOUSE

PRIMROSE HOUSE: The Lumarith plastic container which holds Primrose House Chiffon make-up is lightweight and colorful. The letters are embossed.

HARRIET HUBBARD AYER



HARRIET HUBBARD AYER: Fresh-Paint is a chic arrangement of lip-painting essentials. The black plastic case combines brush, mirror and lipouge.

PRINCE MATCHABELLI



SOAPS

Brighter Fats and Oils Picture Seen

Fats and oils will be among the last products removed from government restriction . . . The soap situation is easing due to reduced military demand and relaxed control over the materials used in its manufacture

by CHARLES E. LUND

Chief, Fats and Oils Unit, Bureau of Foreign and Domestic Commerce

THE end of the war with Japan and the attendant drop in military demand will release increasingly large supplies of fats and oils to United States civilian consumers over the next 12 months. Substantial improvements in this respect have already occurred. Nevertheless, vital fats and oils, the first products to be placed under export control even before we were drawn into the war, will be the last foodstuffs to be removed from all Government restrictions, with the exception of sugar, the bulk of which is imported.

LOSS OF IMPORTS HURT

Cut off from imports of Far Eastern vegetable oils, ordinarily used in this country principally for industrial purposes, we had to supply both home and fighting fronts with fats and oils from our own production. Farms and factories collaborated in meeting wartime needs by record production, which last year reached nearly 11 billion pounds from domestic raw materials—a 3½ billion pound increase over peacetime levels. However, from being a net importer of more than 1½ billion pounds, the

United States became a net exporter of a half billion pounds. Rationing, industry allocations, restrictions on types of usage, and other Government controls were instituted to effect a more equitable civilian distribution of the supplies remaining after filling military needs.

To obtain additional supplies housewives during wartime salvaged hundreds of millions of pounds of used fats formerly discarded as waste material. Through the cooperation of retail markets, tallow renderers, and the soap industry, these fats helped produce a record volume of soap and its byproduct glycerine. This was done despite a shortage of the quick-lathering coconut oil and other tropical lauric acid oils which normally constitute over 20 per cent of our soap fats.

ESTIMATES REVERSED

VJ-day brought about a complete reversal of previous estimates to the effect that there would be no significant improvement in the United States civilian fat situation prior to mid-summer 1946. In fact, the situation is already improved and indica-

tions are that the consumer may expect a more generous supply within a very short time. All increases will be most welcome, as housewives and other consumers during the past few months have been faced with shortages of nearly all types of fats and oils, both edible and inedible.

Some relief came immediately with the lessened military demand, with domestic consumers assured that they will receive by far the bulk of all fats to be released by the Army. The program of butter set aside primarily for Government purchase was terminated on September 1, and 20 million pounds of the butter stocks held for Army purchase were released to civilians on that date. In line with the improved domestic supply situation with respect to butter, OPA lowered September point values to the same ration levels obtaining for margarine, lard, shortening, and cooking and salad oils.

SOAP SITUATION EASING

As soap for military needs decreases, and with controls over soap materials other than fats and oils relaxed, it is likely that more soap will

soon be available on grocers' shelves. Reductions in military requirements and increased domestic vegetable oil supplies led to the authorization of substantial fourth-quarter increases in the quantity of fats and oils which may be used in the manufacture of shortening and paints, and a somewhat smaller increase in soap. A further indication of the decrease in military demand was the cut in lard set aside from each week's slaughter to 4 per cent of the total live hog weight from a previous $5\frac{1}{2}$ per cent.

Additional supplies of lard, vegetable shortening, and fat pork cuts were routed recently to Southern States where shortages of these products are reported to have adversely affected the level of industrial operation, particularly in the mining, cotton picking, lumbering, and industrial sections. Taking into consideration the amount of dry salt pork used besides the commercially known fats and oils, edible fat consumption in certain parts of the South is normally considerably higher than in other sections of the country.

IMPORT AND EXPORT TRADE

In addition to military cut-backs, termination of lend-lease on VJ-day makes available further supplies of fats and oils on the United States markets. Exports under lend-lease accounted for 1,246 million of the 1,500 million pounds shipped abroad to all destinations last year.

Imports of Philippine copra are expected to arrive in increasing volume starting in the early months of 1946. The trans-Pacific shipping situation is considerably improved and plans are progressing to overcome handicaps of small craft for interisland transportation, insufficient trade goods, and bags for copra collection and shipment. Copra (oil equivalent) and coconut oil accounted for 700 million of our pre-war yearly imports of 2 billion pounds of fats and oils.

The liberation of the Netherlands Indies will make additional supplies of vegetable oils available on world markets, although they may not appear as soon as those forthcoming from the Philippines. Most of Netherlands Indies exports—which totaled 1,369 million pounds in 1938—normally go to Europe, with some 250 million pounds of palm oil shipped yearly to the United States. Opening

of the Netherlands Indies and other producing centers to world trade will progressively ease the extreme shortage of fats and oils in Europe, a shortage which had severely drained United States supplies.

CONTROLS WILL BE EASED

As available quantities of fats and oils begin meeting market demand, it is expected that wartime measures for the equitable distribution of supplies in this country will become less and less necessary. The Government's

Production, Foreign Trade and Consumption of Fats and Oils

| Year | (In million pounds) | | United States Consumption |
|-------------------------|-------------------------------|---|---------------------------|
| | Production from raw materials | Net Imports (including oil equivalent of imported raw materials) ¹ | |
| 1935-39 (average) | 7,241 | 1,885 | 9,069 |
| 1940 | 8,781 | 1,226 | 9,734 |
| 1941 | 9,383 | 1,259 | 10,920 |
| 1942 | 9,978 | 3 | 10,269 |
| 1943 | 10,841 | -628 | 9,923 |
| 1944 | 10,834 | -650 | 10,315 |

general policy is to release controls as soon as possible. However, even after the removal of civilian rationing it will probably be necessary to continue industry allocation and use controls until raw materials are available in sufficient quantities to insure distribution to all users on an equitable basis.

Rationing was not, however, carried to its full meaning in terms of a varying scale for heavy and light workers, age groups, etc., nor could it change the fundamental fact that consumers in the farm areas had access to larger supplies than did their city cousins. Rationing of edible fats, a new experience to American consumers, did check runs on retail stocks and helped hold consumption in line with the level of total available supplies. This was particularly important as maldistribution could have resulted from the pressure of demand from persons with increased incomes.

LIVING OFF THE FATS

It will be recalled that during the early stages of the war and prior to rationing, each rumor of impending shortages motivated overstocking by consumers. Recurrent wartime rumors of soap rationing, which were never founded on Government intentions in this complicated field, resulted in waves of overbuying and consequent shortages in distribution

channels. Reserve stocks which consumers were able to accumulate are now beginning to be used as adequate future supplies seem assured. This will help ease pressure on current production and tide us over until times of plenty.

The time is now approaching when your favorite cooking fat, salad dressing, butter and margarine, soap, and washing powder will be available on retailers' shelves, and you can recall with pride that this democracy took wartime controls in its stride,

controls which in retrospect can be seen not to have occasioned a serious general shortage in fats and oils but did insure supplying the urgent needs of our European allies and our war machine with these vital products.

¹ Minus figures indicate net exports.
Sources: Compiled from data of the Bureau of the Census, Department of Commerce; Fish and Wildlife Service, Department of the Interior; and Department of Agriculture.
Reprint from Domestic Commerce.



The wartime expedient of salvaging waste fats at home did much to aid the fats and oils situation and helped overcome a shortage. Gradual improvement in the quantities of fats and oils will occur in the coming months.

FLAVORS

Aldehydes for Flavors

Even though aldehydes are sometimes used in traces they are among the most important compounding components

by MORRIS B. JACOBS, Ph.D.

THE aldehydes are an important group of compounds used in the flavor trade. Wagner¹ and his collaborators devote two volumes of their treatise on odorous materials to this group of compounds alone. A glance at the formulas in the literature for the compounding of artificial flavors will show that there is scarcely a composition in which aldehydes do not play a role. The aldehydes usually have such powerful odors that often they are used in little more than traces in these compositions. But despite the fact that the amount of aldehyde used is relatively small, the effect that they have is outstanding, particularly in the case of the higher aliphatic aldehydes.

FRESHER FLAVOR

Aldehydes generally endow the compositions in which they are used as ingredients with a fresher and more natural flavor. There should be no surprise that this is so for many natural flavors and essential oils contain varying proportions of such aldehydes. The quantity of aliphatic aldehydes in natural flavors is generally small in comparison with that of the aromatic aldehydes. Thus,

orange oil contains small amounts of capraldehyde, and lime oil contains small amounts of pelargonaldehyde.

CLASSIFICATION

Aldehydes used in the flavor industry can be classified along classical lines into (a) aliphatic aldehydes or as they are often termed, "higher aliphatic aldehydes" and (b) aromatic aldehydes. A more convenient classification is to place them into the following groups: (a) aliphatic aldehydes, (b) terpene aldehydes and (c) aromatic aldehydes. Such substances as the so-called aldehyde C₁₄, aldehyde C₁₆, and aldehyde C₁₈ are not aldehydes at all. Thus so-called aldehyde C₁₄ or peach aldehyde is *gamma*-undecalactone, an inner ester or lactone; aldehyde C₁₆, ethyl phenylglycidate or strawberry aldehyde, is an epoxy ester; and aldehyde C₁₈ or coconut aldehyde is *gamma*-nonyl lactone, an inner ester or lactone. It is also to be noted that compounds such as vanillin and heliotropin which are commonly classified with the aromatic aldehydes are actually compounds with more than one functional group. Thus vanillin is a methoxy hydroxy benzaldehyde,

that is, it is an ether-phenol-aldehyde and heliotropin or piperonal is a dioxymethylene benzaldehyde or an ether-aldehyde. So, too, anisaldehyde is a methoxy benzaldehyde or an ether-aldehyde. It is preferable then to classify these compounds separately.

In the trade, it is common practice to name the aliphatic aldehydes according to the number of carbon atoms they contain. According to this system of nomenclature, enanthaldehyde is aldehyde C₇, caprylaldehyde is aldehyde C₈, pelargonaldehyde is aldehyde C₉, capraldehyde is aldehyde C₁₀, hendecanal is aldehyde C₁₁, lauraldehyde is aldehyde C₁₂, etc. While this system has much to recommend it, it becomes ambiguous with our increasing knowledge and use of aliphatic aldehydes. In fact, serious errors may result, because isomeric aldehydes may not have the same odor or use. For instance, capraldehyde or normal aldehyde C₁₀ is a liquid with a pleasant odor of orange flowers; on the other hand, *dl*-dimethyl octanal and *dl*-dimethyl octanal are isomeric C₁₀ aldehydes with agreeable lemon odors resembling citral. Another advantage in

the use of chemical nomenclature is the greater ease of reference to the literature.

ALIPHATIC ALDEHYDES

Practically all of the aliphatic aldehydes have a very disagreeable odor in a concentrated state. Upon dilution, however, many of them do have a pleasant odor and flavor, but even when greatly diluted propionaldehyde, *n*-butyraldehyde, *n*-valeraldehyde and caproaldehyde do not have a pleasant odor. Consequently these aldehydes have found very little use in the flavor industry. From enanthaldehyde, aldehyde C_7 up, there is increasing use made of these compounds not only in the flavoring industry but also in the perfume industry.

As a general rule it is not wise to use large quantities of the aliphatic aldehydes in the compounding of flavor compositions. Best results are obtained when they are used in small quantities to give nuance and tone to a flavor formulation.

Acetaldehyde, CH_3CHO , aldehyde, acetic aldehyde was one of the first organic compounds well characterized for it was isolated by Döbereiner in 1812. Because of its characteristic odor it was also one of the very first substances to be used in the preparation of flavoring essences. It is hardly to be recommended for this purpose, even though it has been isolated from fruits,² for not only does it have the marked disadvantage of a very low boiling point but it is also a toxic substance.

Enanthaldehyde, aldehyde C_7 , $CH_3(CH_2)_5CHO$, heptanal or heptyl aldehyde is a colorless liquid with an intense disagreeable odor which upon dilution has a heavy fruity

odor. Its concentration in compositions should seldom exceed a trace, except possibly in almond flavors. It is added preferably as a dilute solution in benzyl alcohol.

Caprylaldehyde, $CH_3(CH_2)_6CHO$, aldehyde C_8 , octanal, octyl aldehyde, is a liquid with a sharp, strong odor which resembles enanthaldehyde but also has a weak cabbage-like note. It is found naturally in citronella and lemongrass oils and can also be prepared synthetically. It can probably be used in the compounding of apricot, cherry and plum flavors but only in very small concentrations.

Pelargonaldehyde, $CH_3(CH_2)_7CHO$, aldehyde C_9 , nonylaldehyde, nonanal, is a liquid at room temperature with a rose-like odor having a penetrating citronella shade. It is used in preparing flavors similar to those in which it occurs naturally like cinnamon, ginger, lemon, and tangerine but in no case should its concentration exceed 1 per cent.

Capraldehyde, $CH_3(CH_2)_8CHO$, *n*-decylaldehyde, decanal, normal aldehyde C_{10} , is a liquid with a pleasant odor of orange flowers and a waxy aroma. It occurs naturally in several essential oils among which may be mentioned cassia, coriander, orange, lemongrass and orris. It is used principally for lemon, honey and orange flavors but as in the case of other aliphatic aldehydes only in small amounts.

dl-Dimethyl octanal, $(CH_3)_2CH(CH_2)_5CH(CH_3)CH_2CHO$, an isomeric C_{10} aldehyde, is a liquid with an agreeable lemon odor and flavor. It has been suggested for use in lemon, orange and tangerine flavors. Its isomer *d*-dimethyl octanal is entirely analogous but the lemon odor of this isomer resembles citral more

strongly than the *dl* form. It, too, has been suggested for citrus flavors.

Isocapraldehyde, $(CH_3)_2CHCH(CH_3)CH_2CH_2CH_2CHO$, isopropyl isoamyl acetaldehyde, 2,6-dimethyl-3-methylheptane, another isomeric C_{10} aldehyde, is a liquid which has a pleasant aromatic odor and a ginger-like flavor. Some use of this compound has been made in blackberry, brandy, cherry, ginger, hops and whisky flavors.

Hendecanal, $CH_3(CH_2)_9CHO$, aldehyde C_{11} , undecylaldehyde, undecanal, is a liquid with a powerful odor barely resembling rose, and with a honey-like aroma. Because of this it is useful in honey flavors and possibly for other essences but only in traces to lend a flowery note.

Hendecenal, $CH_2=CH(CH_2)_9CHO$, undecylene aldehyde, sometimes also called aldehyde C_{11} , is a liquid with a pleasant flowery aroma without the fatty aldehyde odor. It also can be used for honey flavors but has the disadvantage of polymerizing easily.

Dimethyl nonanal, $(CH_3)_2CH(CH_2)_3CH(CH_3)CH_2CH_2CHO$, *d*-3,7-dimethyl nonanal, another isomeric C_{11} aldehyde, is a liquid with an odor of orange flowers and a lemon flavor. It has been suggested for use in citrus type formulations.

Lauraldehyde, $CH_3(CH_2)_{10}CHO$, aldehyde C_{12} , lauric aldehyde, dodecylaldehyde, dodecanal, occurs in crystalline leaflets having a somewhat peculiar fatty odor, resembling violets. The principal flavor use is for honey flavors used in modifying other essences. It must be used very carefully and in small amounts so that its concentration does not exceed 0.5 per cent.

Methyl hendecanal, $CH_3(CH_2)_8CH(CH_3)CHO$, 2-methyl-1-hendeca-

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nal, 2-methyl-1-undecanal, methyl *n*-nonyl acetaldehyde, has a strong lemon-amber-like odor, a bitter taste and a waxy flavor. Traces and at times low concentrations are used for honey and orange flavors.

Tridecanal, $\text{CH}_3(\text{CH}_2)_{11}\text{CHO}$, aldehyde C_{13} , tridecyl aldehyde, when freshly prepared is a liquid at normal temperatures. It has a strong flowery odor and a distinct waxy flavor. It is used principally for honey flavors but may possibly be employed in the preparation of other

formulations in traces to produce a flowery note.

Methyl dodecanal, $\text{CH}_3(\text{CH}_2)_8\text{CH}(\text{CH}_3)\text{CH}_2\text{CHO}$, methyl duodecanal, methyl nonyl propionaldehyde, is an isomeric C_{13} aldehyde. It is a liquid with an agreeable odor which has been used principally for honey flavors.

Myristic aldehyde, $\text{CH}_3(\text{CH}_2)_{12}\text{CHO}$, *n*-tetradecyl aldehyde, tetradecanal is sometimes referred to as aldehyde C_{14} . It should, of course, not be confused with "so-called aldehyde C_{14} ,"

which is, as mentioned previously, *gamma*-undecalactone. Myristic aldehyde is a solid occurring in either waxy masses or in crystals. It has a weak aromatic odor resembling 2-methyl-1-hendecanal (methyl nonyl acetaldehyde) mentioned above.

Amyl heptyl acetaldehyde, $\text{CH}_3(\text{CH}_2)_6\text{CH}(\text{CHO})(\text{CH}_2)_4\text{CH}_3$, diethanthic aldehyde, 6-methylal-tridecane, is another isomeric C_{14} aldehyde. It is a solid crystallizing in transparent

leaflets with an agreeable, refreshing odor of fruits, a sweet fruity taste, and an apricot-peach flavor. Because of its pronounced fruity odor and flavor this aldehyde is used for several essences, principally apricot, currant, peach, pear, and raspberry.

Palmitic aldehyde, $\text{CH}_3(\text{CH}_2)_{14}\text{CHO}$, hexadecanal, is a paraffin-like solid with a weak but agreeable fruity odor and an apricot-peach flavor. Suggested uses are as a minor component of apricot, plum, peach and strawberry flavors. While this compound is a C_{16} aldehyde, it should not be confused with "so-called aldehyde C_{16} ."

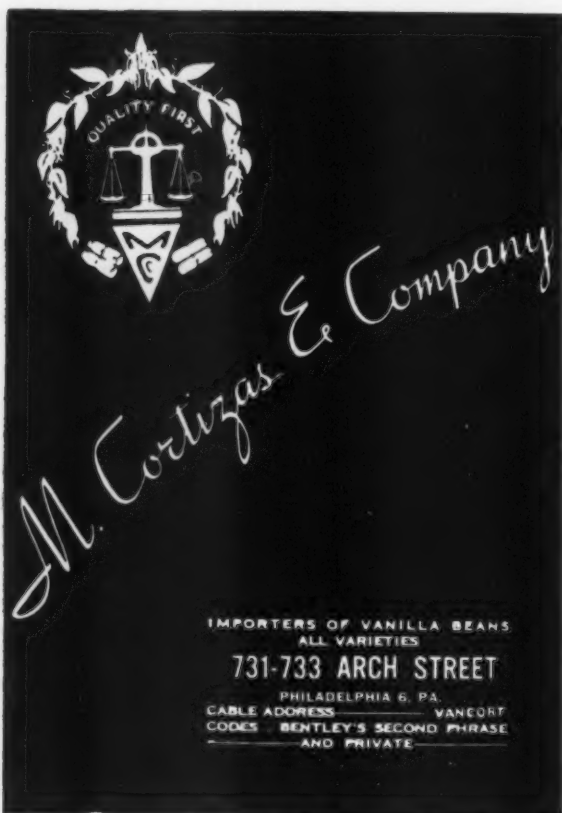
In a succeeding article the terpene and aromatic aldehydes and their uses will be discussed.

¹ Alfred Wagner, Alfons M. Burger and F. Elze, *Riechstoffe und ihre Derivate*.—*Die Aldehyde*. Vol. 5, parts 1 and 2, Hartleben, Vienna & Leipzig, 1929.

² F. B. Power and V. K. Chesnut, *J. Am. Chem. Soc.* 42, 1509 (1920).

Vanilla Bean Shipments

The latest arrival of vanilla beans from Madagascar leaves only a little more than three hundred tons to be exported to the United States between now and June, 1946, under the export quota established by the French Colonial Government. The full export quota for the period June 30th, 1940, to June 30th 1946, was 700 tons for the United States of which about 560 tons have already been shipped. More favorable prices are being quoted on Tahiti beans in view of a rather narrow demand. Because of the short crop of Mexican beans only very limited offerings have been coming in at high prices.



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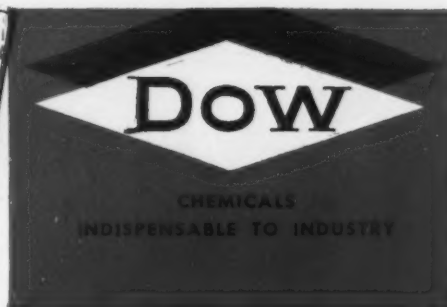
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WASHINGTON PANORAMA

by ARNOLD KRUCKMAN

ALCOHOL still is under control of the Chemicals Order. The supply for the cosmetics, toiletries, and flavors industries, is channelled by way of Paragraph F, under whose terms the allocation is made to the supplier; the supplier is free to sell any quantity he elects to his customer, the end-user, who utilizes it as an ingredient. The supplier, or middleman, must file with the Chemical Division of Civilian Production Administration an estimate of the needs of the businesses he supplies. The November allocation for the needs of the cosmetics, toiletries, and flavors businesses was a complete fulfillment of the aggregate requests. It is expected the December allocation again will fully meet the requests of the industries. The puzzle now is why it is necessary to allocate the alcohol at all.

SUGAR MANUFACTURE

By the time this is published President Truman will have approved the bill passed by the House and the Senate late October authorizing all industrial alcohol plants to make sugar and corn syrup during the period ending next July 1. In passing it is interesting to note that never since they have been legally recognized by the Federal Government in 1866, approximately 80 years ago, have these plants been permitted to make anything except alcohol.

The bill was enacted by the Congress on the plea by Plains States Congressmen that 60,000,000 bushels of surplus potatoes could be converted into profitable and much needed sugar, without expense to the alcohol plants for any mechanical al-

terations, and without cost to the Federal Government. But after the bill was passed the potato conversion came under closer scrutiny, and it was discovered the entire surplus of potatoes would not at best make more than 600 tons of sugar. This led to further inquiry and it was discovered that the Credit Commodity Corporation, of the Department of Agriculture, which financially supports corn prices, expects a huge quantity of spoiled corn by reason of the rains in Fall. The extent of the spoilage will be known when corn goes to the market late in November, or early in December. The Credit Commodity Corporation, another one of those vast Federal banks which are not banks, also has a paternal interest in the 3 or 4 industrial alcohol plants owned by the Government, and has indirectly an interest in all industrial alcohol plants whether Government owned or not. There are said to be a total of 23 such plants.

The law which makes possible the production of sugar and sugar-syrup by the industrial alcohol plants stemmed from the Credit Commodity Corporation and other Department of Agriculture sources. The Congressman who sponsored the bill in the House actually knew so little about it that he was obliged to refer enquiries to the Credit Commodity Corporation. The Agricultural officials stressed that the processing of corn, or potatoes, to make sugar or syrup, would not entail any mechanical changes in the equipment of the alcohol plants. It merely meant that several links in the sequence of alcohol-making would be omitted or modified. They also pointed out the

very surprising fact that sugar-making will be a great relief to the industrial alcohol plants because they are idle, and would undoubtedly remain idle for months, because there is enough surplus industrial alcohol now in stock "to float a fleet of battleships."

Why it is necessary to place even potential limitations on the supply of industrial alcohol for the toiletries, cosmetics, and flavors industries, with enough surplus industrial alcohol on hand "to float a fleet of battleships," is one question it is not possible to answer. Nor why any lack in alcohol for industry could not be produced by the plants whose idleness spurred various agencies of Government to make a special law to make work for them by setting aside a law almost 100 years old. It is literally true you cannot find any one in Government who apparently knows the answer.

ALCOHOL PLENTIFUL

There are further evidences of the abundance of alcohol in the rescission of the methanol control order. This revocation has an indirect effect in making ethyl alcohol still more plentiful. This was the last cancellation that came out of the Chemicals Bureau of WPB before it was metamorphosed into the Chemicals Division of the Civilian Production Administration, successor to the administrative powers over WPB orders, and other duties.

The new Chemicals Division of CPA is headed by Larry Brown, who was the Assistant Director of the Chemicals Bureau of WPB, and impressed his personality upon the cosmetics, and toiletries industry as an

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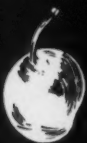
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administrative officer of the Bureau during all the years of the war. Brown takes with him into the new set-up less than forty members of the old Bureau. This is a striking shrinkage from the wartime total of almost 1000 personnel. The Division becomes part of the Bureau of reconversion of CPA.

S. B. FALCK CONTINUES WORK IN CPA

Sylvan B. Falck, who handled the affairs of cosmetics and toiletries, during the closing months of WPB, unexpectedly was requested to continue on the job. He is now formally an official of the aromatics, intermediates and drugs sections of the Chemicals Division of CPA. Aside from the alcohol order it is difficult to identify any order covered by M-300 which affects the cosmetics and toiletries industry. Falck handled a number of kindred materials in WPB, and will be kept very busy even though there is little to do about cosmetics and toiletries. He may be found in Room 4139, Social Security Building, and his telephone is on Extension 2919, with the same exchange number of Republic 7500. All offices of the Civilian Production Administration have been moved to the Social Security Building. Incidentally, there no longer are guards to interfere with your access to any one you wish to visit. You may now pass in and out of Government buildings without let or hindrance.

CPA is headed by J. D. Small, as Administrator. He was a captain in the Navy before coming into WPB with Julius Albert Krug, when Krug came back to take over Donald Nelson's job. Curiously enough, Krug has followed Nelson to Hollywood. He has become assistant Czar of the movies, at \$75,000 a year, under Eric Johnston. Nelson is now the Czar of the independent movie operators, those not in the Johnston group.

ORGANIZATION OF CPA

The CPA comprises four Bureaus in addition to the Bureau of Reconversion. There is a Bureau of Priorities, a Bureau of International Supply, Bureau of Field Operations, and a Bureau of Demobilization. CPA's chief job is to hasten the production of materials, such as alcohol, which are in short supply; and to keep a tight hand on scarce materials; to prevent hoarding and specu-

lation by controlling the accumulation of inventories; to give priorities to those who have real trouble in getting started; to help relief and other similar export programs; and very particularly to supervise the allocation of scarce materials or facilities needed to produce low-priced items in order to stabilize the economy against inflation or deflation. Apparently it is intended to make the production of low-priced items easy in order to spur free spending without increasing prices.

CPA also has announced it will continue to consult 176 key industry advisory committees before any action is taken which will materially affect production or distribution in these industries. WPB found that roundtable discussions with industries was one of the most important factors in the success of its programs. The operation of the 176 committees has been cleared with the Department of Justice, at least until the Second War Powers Act is terminated.

This is one of the important reasons why neither the President nor the Congress are expected to take any steps in the immediate future to formally declare the end of hostilities. The general idea here is that we will still be at war, in the legal sense, until next July, if not longer. The Industry Committees whose life is prolonged includes natural resins, wax importers, collapsible tube manufacturers, glass container manufacturers, various paper industries, research laboratory manufacturers, lead producers, zinc producers, and various wholesale and retail trades. Additional committees will be formed when necessary to remedy conditions that may arise.

CPA will try to speed production of a large number of materials and products, listed by WPB as presently lagging anywhere from two months to more than a year. For instance, the waxes are reported for three months behind in delivery, and with no prospect of attaining normal production. In a long list there are only four chemicals reported in current stock. Corrugated, solid fiber, and folding boxes are reported over three months behind normal delivery. Beauty and barbershop equipment is over three months behind normal and is not expected to reach a balance for usual delivery for at least a year.

Construction of any kind, new, repairs, or additions, is close to the mind of almost every business man.

It may be illuminating to learn that in a catalog of building materials, listed in five tightly printed pages, there are only a dozen items currently available in stock.

OUR INDUSTRY HOLDS ITS OWN

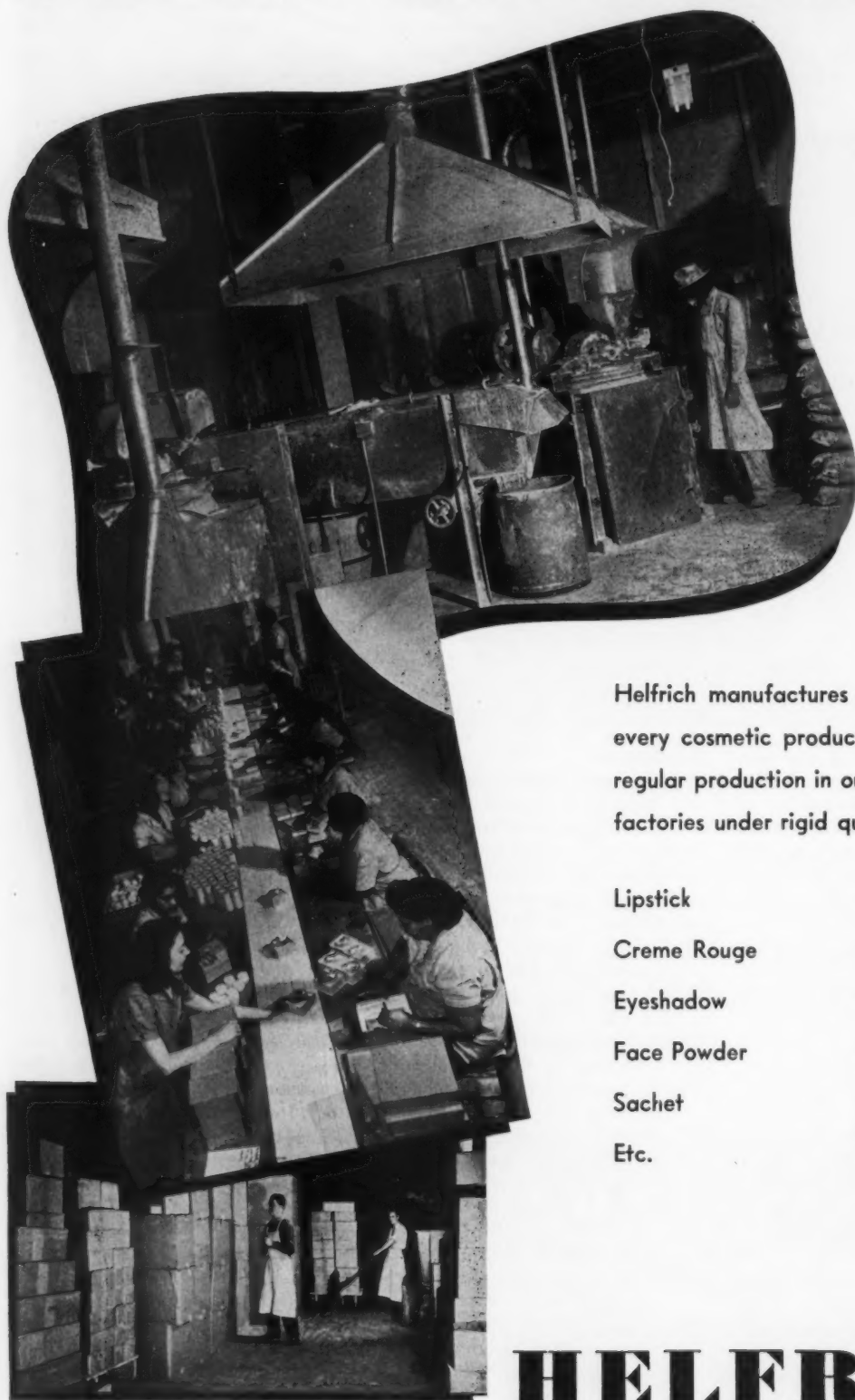
It is interesting to learn that not a single member of the cosmetics and toiletries industry has appealed to WPB for help since August. The record is unique. There is apparently not another industry of a similar nature with the same record. This history is consistent with its war record. Toiletries and cosmetics gave WPB a minimum of trouble, worked without comment within its very tight limitations, devised means of replacing what could not be had, and more than doubled its total business during the war years.

Observers here think the industry has done an amazing job of making cosmetics and toiletries more than a luxury, the past four years, among millions of women and men who never before knew the real utility and wide uses of cosmetics and toiletries. Merchandising experts in Government assume the industry will hold its new following, and that the industry will be wise and skilled in cutting its cloth to fit the shifting budgets ahead. It is thought here that cosmetics and toiletries producers will be less affected by labor drives and by other factors that freeze many industries than many other businesses, because it has managed to stabilize its own internal economy to a large degree.

FOOD PRICE CONTROL RELAXING

Food commodities approaching hundreds have been exempted from price control. There are hints that cosmetics and toiletries might be relieved of some ceilings. Department of Agriculture is keenly interested in frozen orange concentrates made in large quantities in Clearwater, Florida, for use at fountains in 150 retail stores in the Capital since last January; and in another form of orange-freeze concentrate put up in slabs for retailing, wrapped in cellophane and packed in small fiber boxes in Los Angeles. In Florida they have started the production of an orange powder which is reported

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& Essential Oil Review

November, 1945 63



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to retain vitamins, flavor, and color, when a minute quantity is mixed with water. Agriculture Department scientists have discovered methods by which fresh-fruit flavors may be preserved for various purposes.

CITRIC ACID CONTROL REMOVED

Citric acid was removed from control on October 16. Over-all supervision of export and import, as well as any remaining domestic regulations, are now administered by Chief A. L. Kalish, Essential Oils Unit of the Special Commodities Branch of the Office of Marketing and Production. Incidentally, Maurice Brenner, the California fish-packer, after holding the job a month, has resigned as Director of the Special Commodities Branch. H. C. Albin is again the head. Many curious twists and turns have occurred in the Department of Agriculture which have repeatedly inspired the rumor Secretary Anderson might resign. This vast part of Government is in process of one of its extraordinary internal convulsions.

The Army recently cut back orders for 4,500 pounds mace; 178,000 pounds mustard; 36,602 pounds nutmeg; 26,253 pounds various seasonings; 5,000 pounds curry powder; a total of 2,200,000 pounds of spices since September. OPA announced 300 long tons of black pepper in bond from India for resale to Latin American countries were exempted from price control. U. S. Commercial Company handled the transaction. Government announced domestic stocks have not been replenished since Pearl Harbor.

USE OF LEAD INCREASED

The amount of lead which may be used in the production of collapsible tubes during the fourth quarter was increased by WPB from 20 per cent to 26 per cent of the amount used during the calendar year 1944. As amended, M-115 now provides that any manufacturer who did not use lead in making collapsible tubes during 1944 may now apply for a quota. General Imports Order M-63 was revised to remove controls on importation of collapsible tubes, collapsible tube disks, slugs, or other semi-fabricated forms.

The surplus war property summary issued on Nov. 1 by the Reconstruction Finance Corporation

contains a report of perfume and flavor materials, otherwise undescribed. At the Kansas City office there is an unsold total of \$181.04; at Louisville, \$471.20; at Salt Lake City, \$953.70; and at Seattle, \$586.37. Details may be obtained by applying to any of these RFC Surplus Property Offices either by mail, telegram, telephone, or personal call. The materials apparently are not consumer end-use products.

Department of Agriculture, after investigation, announced a crop rotation system devised in Indiana and Michigan has improved the flavor of the mint grown in those States. From California comes word that menthol mint (*Mentha arvensis*), grown on 35 acres, made a crop which averaged 54 pounds oil per acre. The average tested 75 per cent menthol content, and it was possible to extract menthol crystals which could be sold on a competitive commercial basis. The prospects are regarded as entirely favorable. It is held the California industry can meet the Brazilian competition.

Vegetable wax and beeswax, used in cosmetics, applying especially to carnauba, ouricury, candelilla, imported and domestic beeswax, are no longer under price control so far as importers, bleachers, refiners and beekeepers are concerned. In making the announcement, OPA ventured the assertion that the price of finished cosmetics products would not be materially affected.

FATS AND OILS SHORTAGE

The Murray Small Business Committee is actively on the warpath to find out why there is such shortage of fats and oils. It recently issued an angry formal statement in which it accused some unnamed person or persons of being too anxious to send our fats and oils to Europe, even at the expense of American business and American homes. Senator Stewart of Tennessee said that he knew hundreds of smaller businesses which either had closed, or were on the brink of closing, for lack of fats and oils; that Southerners were undernourished because they were deprived of their staple food. The Committee is making an investigation which promises to be disconcerting for the State Department and some war agencies. The Senate Committee appears to have some doubts

about the Department of Agriculture, but it has no criticism of Secretary Anderson. The latest statement from the Department predicts more fats and oils in 1946. The increase is expected in imports, the first net import balance since 1941. Apparently some imports are expected from Asia, Africa, South America, Australia, New Zealand, the Pacific Islands, and from the Antarctic. The experts predict real increase in 1947. OPA announced the additional allocation of 22,000,000 pounds of fats and oils in October made it possible to permit all industrial users, except manufacturers of pharmaceuticals, to increase their uses 5 per cent, during the fourth quarter. About the same time the Department of Commerce came out with a declaration that more soap will soon be available, and that the Philippines will send us copra in January. Over-all domestic production this year is estimated at 9,500,000,000 pounds, or 1,300,000,000 pounds less than last year. Soap, incidentally, is still under price control in Haiti.

The grapevine transmits that the American Embassy in Peru is making persistent diplomatic representations to the South American Government that Peru's restrictions on toilet products from the United States should be removed. It appears that Peru is taxing toilet products shipped from this country, and that Peru's taxes are levied in contravention of the agreements between the two countries. The discrimination is said to favor other countries.

Commerce Department sends word that an importer in Algeria has asked for quotations on 1,500 tons of toilet soap, and other toiletries. The State Department has announced that housing and catering in Paris is so uncertain for visiting American business men that the American Embassy has arranged with the Army to operate the Hotel California, in the Rue de Berri, where transients, on business only, may obtain rooms for \$4 to \$11 a day, and meals at \$2.75 per day. They may stay only three weeks. Thereafter they must arrange for other accommodations. No reservations are made in advance. Real business men, on important missions, traveling outside of Paris, where U. S. forces are stationed, will be permitted to use Army billeting and mess facilities.



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NEW PRODUCTS AND PROCESSES

Electrically-Heated Water Bath

A new Barnstead electrically-heated water bath is on the market for laboratory use. The features of this new bath are: automatic bottle feed, which permits the bath to be carried anywhere, regardless of water connections; rod clamps permanently attached, for supporting equipment; a handy shelf inside for immersion heating; flush-mounted switches and pilot light; convenient test tube holder; and monel metal exterior.

Synthetic dl-Leucine

Production of synthetic dl-Leucine is now under way, it has been announced by the Special Chemicals Division of Winthrop Chemical Co., Inc.

This product is free from isoleucine and other amino acids, as demonstrated by the microbiologic assay, it is asserted.

Other synthetic amino acids supplied by Winthrop are tryptophane, methionine, valine and phenylalanine.

Phenolic Edge Coloring

The Krieger Color & Chemical Co. announces that "Krieger-O-Dip" Phenolic Edge Coloring has successfully passed all tests made by many manufacturers of plastic products.

The color penetrates deeply and the luster of the surface of the product appears on the edges, when this edge coloring is applied and buffed, it is stated. Colors are yellow and green.

New Titrometer

Precision Scientific Co., has placed a new titrometer on the market. The machine was developed to be used in titrations where the nature of the solution made titration by the usual method impractical through inability to see the color change at the endpoint. The operation is similar to that of the pH determination.

The titrometer is portable, has a power consumption of ten watts and

is suitable for continuous operation. No batteries or transformers are required. It has a plus or minus charge of 10 volts in a 115 volt AC line. Two titrations can proceed simultaneously.

Protection Against Dermatitis

Compar, a transparent vinyl resin derivative, developed by Resistoflex Corp., is designed to be worn by workers as a protection against industrial dermatitis. Its makers state that it is completely impervious to all oils, and to solvents, hydraulic fluid, dirt, lint and gases.

Complete freedom of movement is afforded in these light weight garments which are flexible yet tough.

New Catalogs

Thirty-four new chemicals and five new chapters have been added in the twelfth edition of Synthetic Organic Chemicals, published by Carbide and Carbon Chemicals Corp.

As in previous editions, uses, specifications and properties of each chemical are presented in condensed, easy to read form. The volume consists of 120 pages of useful information.

The new wholesale price list of Neumann-Buslee & Wolfe is available.

The latest price list of Fritzsche Brothers, Inc., New York, N. Y., is available.

A revised edition of the technical reference booklet "Cellulose Acetate" has just been issued by Hercules Powder Co. The booklet describes the care with which the acetate is manufactured, and gives the general and specific properties of the material.

Having distributed the entire first edition, National Adhesives has revised and reprinted its handbook, "Resyn Adhesives—When and How to Use them." The new, enlarged

booklet contains additional information on the selection and use of synthetic resin adhesives for peacetime packaging, converting and assembling operations.

Of particular interest is the section on definitions of the various classes of synthetic resin adhesives—lacquers, hot-melts and emulsions. Thermoplastic and thermosetting types are also defined and the properties of all are detailed.

As an aid to small manufacturers in meeting problems prior to actual introduction of a new product, the Bureau of Foreign and Domestic Commerce has prepared a "Check List for the Introduction of New Consumer Products," copies of which may be obtained free from the headquarters in Washington 25, D. C., or from the nearest Department of Commerce field office.

Book Reviews

PAN AMERICAN YEARBOOK, compiled by Pan American Associates. 860 pages, illustrated. The Macmillan Co. Price, \$5.00. Published Oct., 1945.

This book has been compiled by Pan American Associates who spent nearly two years gathering and arranging the material.

It is divided into three parts. Part I: General information on geography, government, transportation, people, economy, education and culture of the various countries; Part II: A chapter devoted to each country, including a full page map, and maps of all major cities, brief statistical survey, bibliography, and specific details on history, population, official trade controls, etc.; Part III: A Who's Who of Inter-American Trade listing more than 25,000 firms and representatives, classified by industry and also alphabetically within each country.

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AMONG OUR FRIENDS

► Dr. Arthur Behr has been made director of aromatics research by the Dow Chemical Co., Midland, Mich., in line with its expanding activities in the field of aromatic chemicals.

Under the new arrangement, Dr. Behr, who came into the Dow organization in 1940, will now divorce himself entirely from production and concentrate his activities on research and assisting the trade with technical problems involving synthetic aromatics.



Arthur Behr

► B. T. Bush, Jr., son of Burton T. Bush, founder and president of Bush Aromatics, Inc., New York, N. Y., has joined the organization following his discharge from the Navy. After he was graduated from Hamilton College, Mr. Bush entered the Naval Reserve in 1940 as an aviation cadet. Since then he has been flying for the Navy, ferrying aircraft and giving instruction in this country and in Central America. He formed a crew of six for the PV-2 (Harpoon) and was destined for the Pacific when the war was terminated. He was discharged from the Navy at San Diego in September of this year.

► Edward Remus & Co., New York, N. Y., is opening a Chicago office and warehouse soon. The branch is to be under the supervision of Henry H. Pine.

► Sgt. Maj. Karl H. Landes has joined R. J. Prentiss & Co., Inc., New York, N. Y., as manager of the aromatic drugs and spices department.

Mr. Landes holds degree of Doctor of Botanical and Pharmaceutical Chemistry, and has written a number of articles on spices and botanical chemistry.

Commissioned a 1st Lt., Mr. Landes

resigned to join the parachutists. A member of the 503rd Parachute Regiment, he saw action in several major campaigns in Africa, Asia, the Pacific and the Philippines. Under fire 64 times, he made six combat jumps, including one at Corregidor. He holds the purple heart with two clusters, and the bronze and silver stars. He has had seven commendations and has been recommended for the Legion of Merit.

► Hugh D. McKay has been made president of Alfred D. McKelvy Co., New York, N. Y. Mr. McKay is also vice-president and director of the Vick Chemical Co.

► F. H. Leonhardt, president of Fritzsche Brothers, Inc., New York, N. Y., paints an encouraging picture in an open letter which has been mailed to customers.



F. H. Leonhardt

He states in part: "In our own field particularly with respect to aromatic chemicals most controls were promptly removed with the initial effect of making immediately more plentiful quite a number of aromatic chemicals and of giving promise of early relief with respect to others. The situation continues to improve rapidly but unfortunately not as rapidly as many have seemed to hope and expect. By the end of the year most chemicals should be in ample supply for all needs."

► Dr. Joseph Rosin has retired as vice-president of Merck & Co., Rahway, N. J. He had been chemical director in its laboratories. Dr. Rosin had been associated with Powers-Weightman-Rosengarten Co. since 1909, and with Merck & Co. since it absorbed the former company in 1927.

He is succeeded by Dr. Beverly L.

Clarke, who will receive the new title of director of chemical control. Dr. Clarke was formerly director of the analytical department of Bell Telephone Laboratories.

► Edward V. Killeen, George Leuders & Co., New York, N. Y., has been given the honorary degree of Doctor of Laws by St. John's University, Brooklyn, N. Y. The University at a convocation in celebration of its 75th anniversary, conferred the degree in recognition of Mr. Killeen's activity in Catholic charities in Brooklyn for many years. He also holds an LL.D. degree from Holy Cross College in Worcester, Mass., and is a Knight of St. Gregory.

► C. Smith, president of the Smith Chemical & Color Co., Brooklyn, N. Y., has announced the appointment of Leo Sperber as field representative in the metropolitan territory, and of William Kraus as eastern field representative. Mr. Sperber has been connected with the sales and traffic departments for eight years and Mr. Kraus has recently been discharged from the army after three years of active service including 64 air missions from Sardinia as well as other action in the European theatre.

► Ralph A. Lostro has been elected president of Sperti, Inc., Cincinnati, Ohio. He was formerly executive vice-president. William Albers, formerly president, has been made active chairman of the board. William D. Sieburn, John Krutzkamp, Dr. Stanley Baker and Harold Holmyard have become vice-presidents.

► Edward D. Lane has been appointed sales promotion manager of Lamont, Corliss & Co., New York, N. Y., G. L. King, vice-president and general sales manager of the company, has just announced.



Edward D. Lane

Mr. Lane joined the firm in 1933 as sales representative in the Atlanta, Ga., territory. He later became manager of the Cleveland office, and in 1936 came to the New York office as field manager.

► Mortimer H. Hirschfield has joined Primrose House, Inc., New York, N. Y., as Eastern district manager, and will cover New York City, Westchester and Northern New Jersey.

He was with Helena Rubinstein for twelve years, first as sales representative in New England, and later as sales manager at Tone from 1941 to 1943, when he left to join the Army.

► Lt. Joseph C. Pickard has joined the sales staff of the Robinson Wagner Co., New York, N. Y. He is a graduate of Bard College and prior to his discharge from the army served as supply and personnel officer of the hospital ship Acadia. Lt. Bard will specialize in the sales development of new emulsifiers and surface active agents developed by the company.

► Dr. Donald F. Starr has joined the research department of S. B. Penick & Co., New York, N. Y. He has been employed for the past ten years by the United States Bureau of Entomology and Plant Quarantine.

► Lt. R. M. Dubois, who received the Croix de Guerre with Silver Star for rendering "important service with courage and coolheadedness," has joined the sales staff of Prince Matchabelli, Inc., New York, N. Y. He previously received a Navy commendation from the United States for his work before and during the Normandy and Brittany campaigns.

Before he joined the Navy in the Spring of 1941, Lt. Dubois spent two years at Morse International in the media and radio departments. Previous to that connection, he was with Vick Chemical Co.

► Bernard Anderson has been appointed sales manager for Elmo Sales Corp., Philadelphia, Pa. He had previously been district manager for Kathleen Mary Quinlan, and before that he had been associated with Dorothy Gray, Harriet Hubbard Ayer and Delettrez.

► Mr. and Mrs. Jurant Shepherd, Sr., observed their fiftieth wedding anniversary in Ft. Worth, Texas, on October 14. Mrs. Shepherd is associated with Avon Products, Inc., New York, N. Y., as manager of the Ft. Worth division. She directs training of women for sales and executive positions.

The former Mary Jackson, she came to Ft. Worth in 1877, served as

public school teacher in 1889 and 1890, and married Mr. Shepherd, a printing plant executive, in 1895.

► Ruth Ann Bolway has been appointed publicity director for Shulton, Inc., New York, N. Y., to take



Miriam Gibson



Ruth Ann Bolway

the place of Miriam Gibson, who has retired to private life. Miss Gibson was married to George S. French Sept. 9, 1944, in St. Petersburg, Fla. Miss Bolway has been assistant publicity director for the past eighteen months.

► Eliot Warburton has been appointed managing director of all William R. Warner & Co., New York, N. Y., subsidiary companies in Great Britain. Mr. Warburton was formerly in charge of Vick Chemical Co., in the United Kingdom and on the European Continent.

► Col. Lowell P. Weicker has returned to his active duties as president of E. R. Squibb & Sons, New York, N. Y. Col. Weicker served in the war as deputy director of intelligence on the staff of Gen. Carl Spaatz, commander of the U. S. Strategic Air Forces in the European theatre.



Shown here are A. E. Mullen's three months' old grandson, Frank Mortimer Thompson, Jr., his son-in-law, Frank Thompson, and his daughter, Edith. Mr. Mullen is head of the Apli Division of Allied Products, Inc., New York, N. Y.

► Martin Revson has rejoined Revlon Products Corp., New York, N. Y., as executive assistant to the president, a newly created post. He had been in the U. S. Army for twenty-nine months. Mr. Revson will direct Revlon Export Corp., and other affiliated companies. Before the war, he was general sales manager of Revlon Products Corp.

► Brewster S. Beach has been appointed manager of the newly created department of public relations within McKesson & Robbins, Bridgeport, Conn. Mr. Beach resigned as a partner in Baldwin, Beach & Mermey in 1942, and was commissioned a lieutenant, senior grade, in the U. S. Naval Reserve. Prior to being returned to inactive service last month, he served for a year in the Pacific area.

► Homer Wherley has been appointed as a sales representative of the Los Angeles branch of Shulton, Inc., New York, N. Y. He will cover Arizona, part of California, and Las Vegas, Nevada.

► Wally Westmore, House of Westmore, Hollywood, Calif., has been appointed chairman of the Cosmetic Division in the 1945 Sister Kenny Foundation drive to fight Infantile Paralysis.

The drive for \$5,000,000 will get under way Nov. 22, and will continue through mid Dec.

► Arthur H. Carnes has joined the staff of Velsicol Corp., Chicago, Ill., as Mid-west district manager. He is a member of the Chicago Drug and Chemical Association and the Chicago Perfumery, Soap and Extract Association. Mr. Carnes was division sales manager for Stanco Distributing Co. for twenty years.

► Kelly Y. Siddal, controller of Procter & Gamble, Cincinnati, Ohio, has been reelected a vice-president of the Controllers Institute of America. He was president of the Institute's Cincinnati Control for 1943-44.

► Bernard Armour, president of Heyden Chemical Corp., New York, N. Y., has purchased the Ore and Chemical Corp. as an individual. Florida phosphate lands are under lease to the corporation.

► Major Charles C. Bryan has returned to the Sales Division of Fritzsche Brothers, Inc., New York, N. Y., after more than three years service with the American Air Force's 51st Fighter Group.

During most of his absence, Major Bryan served in the China-Burma-India theatre, of which twenty-six months were spent in China. However, in addition to numerous strategic or enforced moves resulting from the ebb and flow of the Far East War, he saw most of the China-India front at first hand. His duties in Combat Intelligence brought him for a long time in frequent contact with General Claire L. Chennault. An official mission enabled him to reach the musk region of Tibet where, in his leisure time, he had an opportunity to study and obtain up-to-date and little known data on the trade in Tonquin Musk.

► Dr. Gaston Proot has been appointed managing director of Maxime, Ltd., London. He had been chief chemist for Cyclax, Ltd., for ten years.

► Robert P. Breckenridge has joined Revlon Products Corp., New York, N. Y., as director of merchandising. Major Breckenridge has passed five years as an engineer officer in the U. S. Army.

► Charles E. Rosset of the Swiss Consulate General, New York, N. Y., was one of the noted guests at the farewell cocktail party given in honor of his fellow countryman, Herbert Bauer, president of Herba, Inc.

The occasion was the eve of Mr. Bauer's departure for Europe by plane to re-establish foreign marketing and distribution centers for prominent American companies in the toilet goods and allied fields.

► Leona Woodworth, publicity director of Marinello Cosmetics, Sales Affiliates, Inc., New York, N. Y., has been asked by McGraw-Hill to write a book on make-up.

Miss Woodworth has functioned in



Charles C. Bryan

almost every branch of the cosmetic industry, and has been associated in an executive capacity with Max Factor & Co., Revlon Products Corp., and House of Westmore, Inc.

In addition to her position with Marinello, Miss Woodworth has been conducting "Charm Tip," a beauty and charm feature appearing in New York subways, and a course in make-up and grooming which she originated last year for New York City College.

► T. P. Hastings has been made comptroller for William R. Warner & Co., New York, N. Y. He will be in complete charge of the newly established division of accounts. Mr. Hastings has been with the firm for twenty-five years.

► Ralph H. Auch has left the War Production Board after three and a half years in Washington, D. C., first



Ralph H. Auch

as a consultant and later as principal industrial adviser. He is returning to Cincinnati to establish himself as a manufacturer's agent in chemicals and contain-

ers. Mr. Auch is well known to our readers as a contributor of numerous articles on production and product development over a period of twenty years.

► L. E. Wicklum, president of Frederick Stearns & Co. of Canada, Ltd., has returned to his headquarters in Windsor after making a study of Western Canadian drug stores.

► Warren A. Cowart has joined Daggett & Ramsdell, New York, N. Y., as representative in the Southern territory, from Texas to Florida. Arthur F. Wieners is to have Ohio, Michigan, Indiana, Missouri, Kansas, Kentucky and part of Illinois.

► Charles S. Glickman has been appointed sales agent for the U. S. by Ozokerite Mining Co., producers of Utah Wax. His address is 3862 Flatlands Ave., Brooklyn, N. Y.

► Richard C. Jones has joined Associated Products, Inc., Chicago, Ill., as art director, it has been announced



Richard C. Jones

by Lewis J. Ruskin, president. Before joining the organization Mr. Jones worked for many years in New York as package designer, promotion and display director for leading stores and cosmetic firms.

Previous to his work in the cosmetic field, he was well known as a book illustrator and mural artist.

► Chester A. Snell has joined the staff of Foster D. Snell, Inc., Brooklyn, N. Y. Dr. Snell received his B.S., M.S., and Ph.D. degrees in chemistry from the Polytechnic Institute of Brooklyn. He had been connected with the Aluminum Company of America for the past three years.

► Leo G. Peck will receive his terminal leave from the U. S. Army next month, at which time he will return to take up his duties with Peck's Products Co., St. Louis, Mo. Mr. Peck has spent some four years and eight months in active duty, twenty months of which were spent in the European theatre of operations.

► J. Treadwell Bullwinkel has been elected a vice-president in charge of finances of S. B. Penick & Co., New York, N. Y.

► H. L. Hunter, for the past three and a half years director of the Forest Products Division of WPB, has joined Cans, Inc., Chicago, Ill., as special sales representative. The company, which has been engaged entirely in war work since the early part of 1942, has resumed civilian production.

► Helen Martin has joined Colgate-Palmolive-Peet Co., Jersey City, N. J., as cosmetic consultant under Gilbert D. Miles. She was previously with J. Walter Thompson, doing advertising, research, and marketing on such accounts as Pond's, Woodbury and Odorono. Before that she had been connected with Primrose House as a vice-president.

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depend on dupont **ORANGEOL N**

Looking for a fixative that's readily soluble? Du Pont announces a new product, Orangeol N—a fixative that's long lasting, almost completely soluble in 95% perfume alcohol; easily soluble, too, in aqueous alcoholic dilutions. It's a liquid fixative with a yellow tinge and mild, sweet, orange flower odor—just right for orientals, fougères, chypres, the floral bouquets, and excellent for colognes.

(Note: Try it with Astrotone BR—you'll like it!) Orangeol N is ready now.

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THEY FINISHED THEIR JOB—LET'S FINISH OURS—BUY VICTORY BONDS

N

ews and events

Francois de Laire Visits U. S. for First Time in Six Years

Francois de Laire, head of Fabriques de Laire, Issy-les-Moulineaux, France, which is represented in the United States and Canada by Dodge & Olcott, Inc., New York, N. Y., was a welcome visitor to the United States late in October and during the greater part of this month. While here, Mr. de Laire conferred with officials of Dodge & Olcott, Inc., and spent some time visiting the trade and renewing old acquaintances. He also visited Canada on a mission for his government prior to sailing for France.

Mr. de Laire was among the first visitors, representing the raw materials industry of France, to come to the United States since the conclusion of hostilities. His last trip to the United States was in May, 1939.

He reported that he spent the period of the war with his wife and three sons in Paris. During the invasion and liberation slight damage was caused to the company's plant at Issy-les-Moulineaux and more serious damage to the Calais plant where bombs and shells shattered windows, walls and roofs. This created an appearance of widespread damage but fortunately the vital machinery and equipment were not seriously affected and the necessary repairs were made



Francois de Laire

in a short time so that these factories would now be in full operation if coal and raw materials could be received in sufficient quantities.

As active research work was carried on during the war the company expects to be able to make some announcements at a later date of some interesting new products.

Before sailing for home late in November, Mr. de Laire expressed an optimistic outlook over the likelihood of closer relations between the United States and France and an unprecedented era of prosperity particularly in the United States.

Fritzsche Brothers Offers New Service

Fritzsche Brothers, Inc., New York, N. Y., now offers a new service in the form of an irregularly issued bulletin called "Fritzbros Reporter."

It contains up-to-date information on prices, market trends, new products, etc., and will be presented as a supplement to the wholesale price list. Suggestions are welcomed.

TGA to Publish Trade-mark List

The Toilet Goods Assn. published a complete register of trade-marks and trade names in 1936, and a supplement in 1940. Since that time war conditions did not permit bringing out an up-to-date edition. Now, however, a new register is being compiled in conjunction with a publishing house. It is expected that the book will be available shortly after the first of the year.

Cosmetic Credit Men Elect Officers and Plan for Winter Party

New officers of the Drug, Cosmetic & Chemical Credit Men's Assn., elected at the October 18 meeting, are: Joseph C. Lynch, Pacific Coast Borax Co., chairman; Edward Maloney, American Cyanamid & Chemical Corp., vice-chairman; August Wohlfort, Fritzsche Brothers, Inc., treasurer; O. Werner, Baker Castor Oil Co., secretary; and Nat Otte, executive secretary.

A rising vote of thanks was tendered E. P. Utter, retiring chairman for his skilled direction of the group and the good attendance at the meetings throughout the year. Edward Noble read the report of the auditing committee and announcement was made of the death of Howard Knapp, former chairman. Flowers and a letter of condolence were sent.

After the adoption of the new constitution, which had been under consideration for several months, plans for the annual Winter party were announced by Chairman Joseph C. Lynch. The party will be held on the evening of Friday, January 25, at the George Washington Hotel, New York, and in addition to a banquet will include professional entertainment and dancing.

Dominion Essential Oils Plant Rebuilt

The plant of the Dominion Essential Oils Co., Lakefield, Ontario, which was destroyed by fire a year ago, has been rebuilt, and is operating at capacity.



Schimmel & Co., Inc.
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Silbersack Elected American Home Products President

Walter F. Silbersack has been elected president of American Home Products Corp., New York, N. Y., to take the place of Knox Ide. Mr. Ide will continue as the company's general counsel and as a member of the board and the executive, finance and operations committee.

The company had a net income of \$3,943,718 during the nine months ending Sept. 30, amounting to \$3.60 per share. This compares with \$3,426,475 for the like period in 1944. Gross sales were 18 per cent above those of last year.

The company has embarked upon a \$15,000,000 expansion program. At the present, eight new plants are under construction or about to be started in the U. S., Canada and England, and four large additions to existing plants are under way.

Mr. Silbersack will control the \$13,000,000-a-year advertising program as well. His background of marketing, merchandising and advertising will be of particular value.



W. F. Silbersack

Members of the Victory Loan Drive Committee

Herewith is a list of the members of the Cosmetic and Perfume Committee of the Victory Loan Drive: L. E. Lismer, chairman, M. K. Breslauer, Herman L. Brooks, Gertrude Browns, Frank C. Cleary, Norman F.



Carl Whitmore, Chairman of the New York National War Fund, receives a check for the 1946 quota to the War Fund from the Perfume and Cosmetic Section. Paul H. Douglas, Vice-President of the Toilet Goods Association, presents the check.

Dahl, Joseph A. Danilek, Charles W. Darr, K. W. Elkington, William Jacobs, M. K. Katz, R. P. Leube, T. J. Lewis, J. H. McShane, L. V. Talamini, Andre Wick and J. S. Wiedhopf.

Nyal Plans Sales Meeting

E. P. Matthissen, president, and E. C. Kidd, vice-president and advertising manager of the Nyal Co., Detroit, Mich., have planned a series of five sales meetings to be held during December.

The meetings will be held Dec. 4 and 5, in Chicago; Dec. 6 and 7, in Omaha; Dec. 12 and 13, in San Francisco; Dec. 18 and 19, in Cincinnati; and Dec. 21 and 22, in New York.

Insecticide Department of Dodge & Olcott Strengthened

Dr. Walter E. Dove has resigned from the Bureau of Entomology and Plant Quarantine, where for the past several years he has been the principal entomologist in charge of the Division of Insects Affecting Man and Animals, and has joined the Insecticide Department of Dodge & Olcott, Inc., New York, N. Y., to organize and have charge of its Unit of Entomological Research. His staff will include Lawrence C. McAlister, Jr., formerly assistant director of the Orlando station of the Bureau, Herman O. Schroeder, and Dr. Merritt P. Sarles.

A graduate of Mississippi State College, and with a degree of Sc.D. from Johns Hopkins University, Dr. Dove's work with the Bureau covered a wide range of insect control problems including many outside the scope of insects affecting man and animals, on which he is recognized as a top-ranking authority. Whatever his other achievements, Dr. Dove has become most widely known for his success in organizing and supervising the war work of the Orlando laboratory. To this unit was assigned in 1942 the task of finding immediate answers to the problems encountered by the Armed Services in protecting our troops from insect-borne diseases. The work involved testing a vast number of old and new materials and developing new formulations and new techniques to meet new and strange requirements;

and the results contributed very greatly to the low disease ratio maintained by the Services.

Mr. Lawrence McAlister, who is a graduate of Clemson College, served under Dr. Dove as assistant director of research at Orlando, and prior to his assignment there had worked on a number of agricultural pest control problems such as Mexican bean beetle, codling moth, and blueberry maggot, and for several years as an administrative officer of the Bureau on research projects in Porto Rico and later in Mexico on fruit fly control.

Mr. Herman Schroeder, who is a graduate of Bethel Academy, with an MSc from Kansas University in 1930, worked on a wide variety of insect control problems for the Bureau before his assignment to the Army work at Orlando where he worked on tick, flea, mosquito, and fly problems, with special attention to sprays and aerosols and their adaptation to military requirements.

Dr. Merritt P. Sarles is a graduate of Wesleyan University and received his doctorate in 1929 from the School of Hygiene and Public Health of Johns Hopkins University. His past work with the Rockefeller Institute, the University of Chicago, and more recently at the Beltsville Research Laboratory of the Department of Agriculture, has consisted of basic research in the field of parasitology.

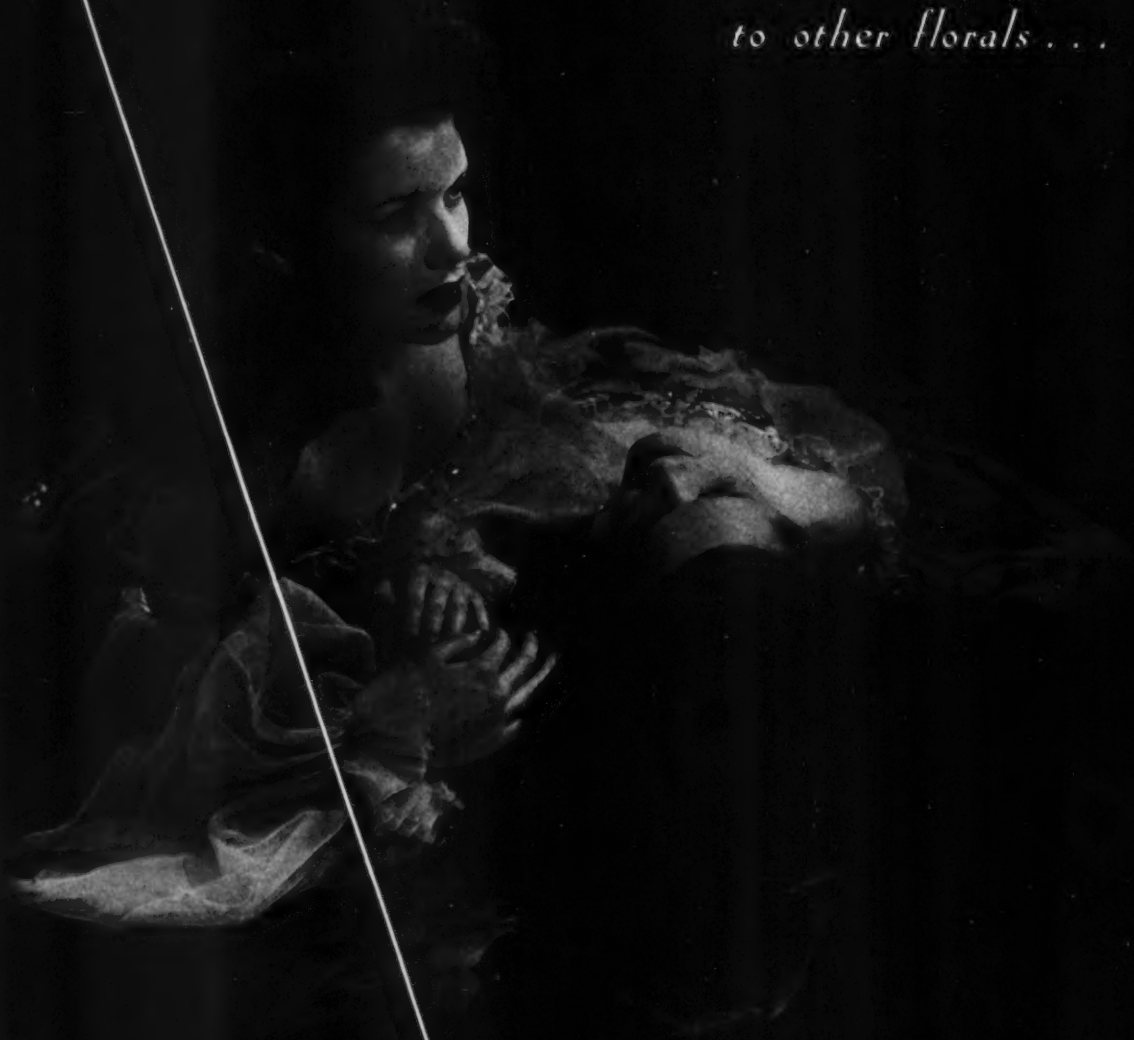
Dodge & Olcott, Inc., is now a totally owned subsidiary of U. S. Industrial Chemicals, Inc., and the insecticide and related activities of both companies have been concentrated in the Insecticide Department of Dodge & Olcott. Both made major contributions to the military insect control problems, Dodge & Olcott by the development of Purified Pyrethrum Extract which made the aerosol program possible, and U. S. I. through Indalone which the Armed Services found safe and effective as a mosquito and fly repellent.

Other major developments in both fields are in progress, and the Unit of Entomological Research under Dr. Dove and his associates will have as its function the entomological and toxicological evaluation of new materials and the study of effective and intelligent formulations as well as basic entomological research in the insecticide, insectifuge, and vermifuge fields.

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Florasynt Announces Expansion Plans

Immediately following the ending of the war, the directors, stockholders, and executives of Florasynt Laboratories, Inc., New York, N. Y., were called to New York from their various national offices to consider and launch a program of enlarged post-war activities.

Announcement was made of the acquisition of a five-floor structure containing over 90,000 square feet and covering the entire block front on the east side of Willow Avenue between 134 and 135 Street, New York, N. Y., to house the main office, enlarged manufacturing facilities, research laboratories and warehouse space. Announced also was the acquisition of a manufacturing plant in San Bernardino, Calif., and the enlargement of the company's Los Angeles headquarters to facilitate West Coast operations. Report was also made of the completion of improvements to the company's new plant in Chicago, the headquarters for the Mid-west territory. With these fully equipped buildings the

company is in a position to offer complete and broad service to its customers throughout the country.

During the course of the meetings an election was held for directors and officers to serve through 1946. Dr. Alexander E. Katz was elected to the newly created post of Chairman of the Board of Directors. William Lakritz is the newly elected president of the company. David Lakritz was re-elected vice-president in charge of manufacturing and research. Leonard Katz was reelected vice-president and assistant to the Chairman of the Board, in charge of West Coast activities. Joseph H. Fein was reelected treasurer, and placed in charge of the company's purchasing, both in this country and abroad, and Charles P. Kramer was reelected secretary and counsel to the company. Charlotte F. Senior was continued as assistant secretary and assistant treasurer.

Recognizing the growth and importance of West Coast and Middle West activities, Dr. Katz will make his headquarters in Los Angeles, Calif., where Leonard Katz will also make his office. William Lakritz will



Florasynt's newly acquired building

make Chicago his home office. David Lakritz, Joseph H. Fein and Charles P. Kramer will continue in charge of the main office factory and laboratories in New York.

The company now offers complete service through its extended facilities from Coast to Coast, as well as in Canada and Mexico through its affiliates in these countries.

20th Exposition of Chemical Industries

Our readers are reminded of the 20th Exposition of Chemical Industries to be held Feb. 25 to March 2, in the Grand Central Palace, New York, N. Y.

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We handle only the best professionally milled, pharmaceutical grades. If you require purity, solubility and viscosity, ask us for samples and quotations.



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How soon? In the case of Essential Oils, as soon as short supplies of those oils originating in the overseas producing areas return to near-normal.

When that day comes (and the sooner the better) the PA will be right back in the saddle again, demanding quality as well as quantity, demanding full value, demanding service with a capital S for swift.

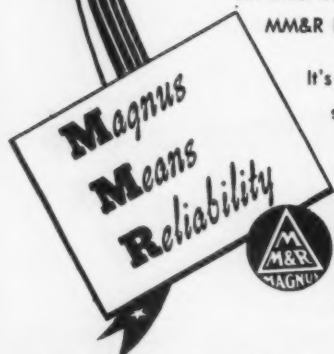
Thanks to America's PA's from MM&R

MM&R takes this opportunity to thank the purchasing agents of America for their splendid cooperation and understanding through four trying years.

Sometimes we couldn't supply your needs fully, sometimes the "superior MM&R service" took a shellacking, sometimes we had to tell our PA friends, "Sorry, we haven't an ounce of Lavender Oil . . . Lemon Oil, or Anise."

But most of the time, if the real McCoy wasn't available, there was a solution—an excellent MM&R Replacement Oil, or a suggestion that helped a harried PA out of a dilemma.

It's been tough sledding for you and for us. We'll be glad when once again, we can sell to PA's who buy on the basis of quality . . . for that's the way we've made our way these past fifty years.



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Los Angeles: Braun Corp. • Seattle, Portland, Spokane: Van Waters & Rogers, Inc. • San Francisco: Braun-Knecht-Heimann-Co. • Canada: Richardson Agencies, Ltd., Toronto

U. S. Supreme Court May Review Arden Fine in Robinson-Patman Case

Elizabeth Arden Sales Co. has appealed to the United States Supreme Court to review the findings of the U. S. Circuit Court of Appeals which imposed a fine of triple damages for a violation of the Robinson-Patman act.

The action was based on a verbal agreement between Elizabeth Arden, Inc., and Gus Blass Co., of Little Rock, Ark. The \$20 a week salary of a demonstrator was to be paid in equal parts by both firms.

At the end of 101 weeks the exclusive franchise to the Arden line was given to M. M. Cohn Co., another Little Rock store, and the entire salary of \$20 for a demonstrator was paid by Arden.

The Blass company then claimed that it had suffered damages to the extent of \$1,010 during the time it had paid this sum as salary to the salesgirl representing the Arden line, and asked for, and received, triple damages.

This case parallels the thinking in that brought in the Federal Trade

Commission cease and desist order against Arden, which was issued in October, 1944, although the Federal Trade Commission was not involved.

This decision has far reaching effects in that it points up the requirement that all outlets must receive the same treatment at the hands of sales organizations.

Grocery and Bakery Firm Selling Cosmetics

A line of 100 well known cosmetics is being marketed through approximately 300 stores throughout the middle west by the Kroger Grocery & Baking Co.

While the firm has sold cosmetics for some time, it has now embarked on a more aggressive campaign, utilizing standardized display units.

Synfleur Scientific Laboratories Appoints Australian Representative

Synfleur Scientific Laboratories, Monticello, N. Y., announces the appointment of Christy Products Australia Pty. Ltd., Melbourne, Australia, as its representative in Australia and New Zealand.

The End of a Treasure Hunt

The quartet of Stradivari instruments once owned by the great Paganini are reunited and were played together for the first time in over 100 years just recently on a Stradivari Orchestra Program. These programs are sponsored by Prince Matchabelli, Inc., New York, N. Y.



Inspecting the instruments and a painting of Paganini are, reading left to right: Paul Lavallo, conductor of the Stradavari orchestra, Margaret Bickel, Norman F. Dahl, Emil Herrmann, owner of the Paganini Quartet, and Jean Cox.

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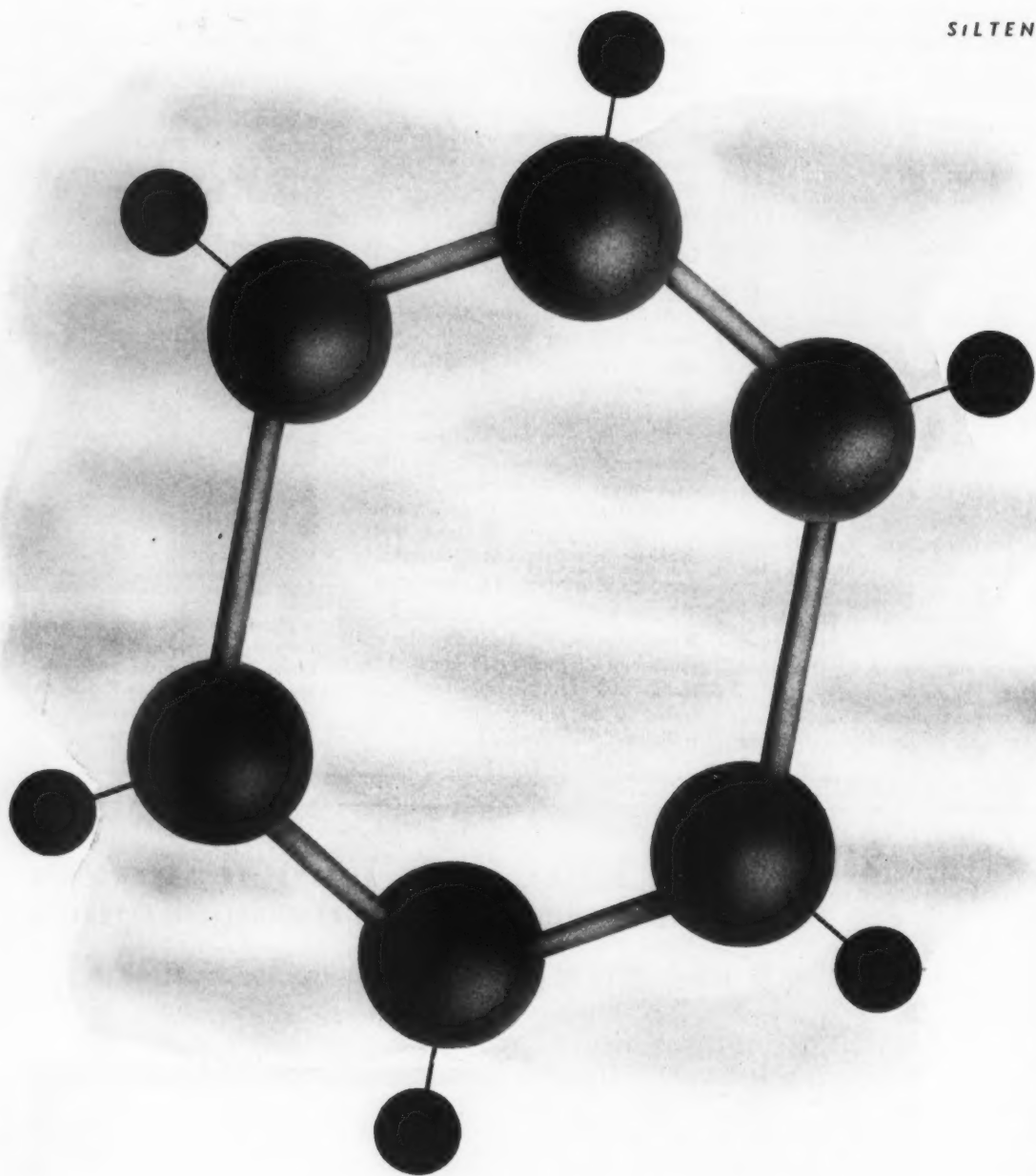
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Evans Chemetics in War Time and Peace

Evans Chemetics, Inc., New York, N. Y., illustrates an unusual program of war-time conversion. Contract manufacturers for many years for all kinds of cosmetics, Evans filled a war-time role of compounding ointments for protection against poison gas, produced the first commercial batches of prophylactics containing a sulfa drug, made high-grade hydrogen peroxide as a treatment after exposure to Lesite gas, produced potassium chlorate of various grades which went into primer mixtures for ammunition, smoke grenades, made successful insect repellents, and produced "walkie-labs" for identifying poison gases right on the field.

End of the war found the company had not neglected developments in the cosmetic field, as was shown by late developments in cake make-up, "bottled stockings," odorless depilatories, and solutions for cold permanent waving.

As an important outcome of the continuous investigation of synthetic organic chemicals, directly related to

its war work, Evans Chemetics has produced many valuable compounds. Thirty of these were shown recently at a cocktail party. Some of these were entirely new, some known but never available commercially.

Most of the Evans executive staff was present at the party, as well as many representatives from abroad.

Visitors representing Evans' foreign affiliate, Evans Chemicals Ltd., were Alan B. Bell, from England; Hubert S. Fagel, Denmark; Bruno Barlach, Sweden; and Arnold Schaufelberger, Switzerland.

Dow Chemical Expanding in Plastics

A projected \$15,000,000 expansion in plastics production facilities of the Dow Chemical Co., Midland, Mich., has been announced.

The Dow Company hopes in five years or less to be producing at least 150 million pounds of plastic materials per year.

The expansion in Dow's facilities is planned around a three-story warehouse with production wings attached on either side.

Packaging Institute to Hold Meeting

The seventh annual meeting of Packaging Institute, Inc., will be held at the Hotel Commodore, New York, N. Y., on Nov. 26 and 27. This meeting and packaging conference will be limited to the membership of the Institute because of present crowded hotel and traveling facilities.

An announcement has been made of the appointment of Major Albin P. Dearing as executive director of the Institute. Major Dearing assumed his new position on Nov. 1.

Adam Hat Stores Offer Men's Cosmetics

The nation-wide chain of Adam Hat stores now offers a line of men's toiletries to its patrons.

The line, retailing at 50 cents per item, consists of cologne, deodorant, hair cream oil, talcum, brushless shave cream, lather shave cream, after shave lotion, and two shampoos.

It is reported that sales have proven to be satisfactory.



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5 WAYS
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WHAT SINGLE INGREDIENT has magical consumer appeal? You'll find the answer waiting for you in the corner drug stores of America. Preference for products enriched with LANOLIN is overwhelming!

In the words of a neighborhood druggist, "We recommend as more beneficial the toiletry that contains lanolin. Customers accept it more readily, and some even ask for a product that contains lanolin."

The cue for post-war profits is clear! Start experimenting with Malmstrom's Nimco Brand Lanolin today. Yours for the asking are testing samples—and the know-how that has made Malmstrom "America's Largest Supplier of Lanolin."

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Fats Situation Hampers Soap Makers

The decline in soap sales which began the first of this year continued through the third quarter ending September 30, according to figures announced by Roscoe C. Edlund, manager of the Association of American Soap and Glycerine Producers. The decline is attributed by Mr. Edlund to restrictions on the amount of fats which the government allows for soap-making.

In the first nine months of 1945, sixty-eight manufacturers, representing about nine-tenths of total production, delivered to the American people 2,218,256,000 pounds of soaps other than liquid, and 3,490,000 gallons of liquid soaps. This soap went to industrial plants, to the Armed Forces, to the government, and to homes and civilians.

Deliveries of soap other than liquid during these months were 8.6 per cent less than in the corresponding period of 1944. Liquid soap deliveries increased, however, 16.3 per cent.

Third quarter soap deliveries end-

ing September 30 declined below the second quarter ending June 30, the decline for soaps other than liquid being 12.8 per cent, although the deliveries of liquid soaps increased 26.4 per cent. Sales in dollars in the third quarter were 9 per cent less than in the second quarter. They declined from \$102,325,000 in the three months ending June 30 to \$93,125,000 in the three months ending September 30.

World-wide Survey Planned

According to Thomas W. Delehanty, chief of the Commerce Department's Bureau of Foreign & Domestic Commerce, a world-wide survey is being planned to ascertain estimated production figures, distribution and consumption, harvesting methods, and standards, in the fields of crude drugs and essential oils. The survey will take several months.

Before this time, only specific information was sought, without an attempt to arrive at an over-all picture. The project has not yet been cleared.

Standard Oil Organizing Chemical Products Department

Recognizing the increasing importance of manufacture of chemical products from petroleum, Standard Oil Co. (Indiana) is organizing a chemical products department.

The duties of the department will be to explore the market for petroleum chemicals, work with research and manufacturing departments in developing and producing marketable derivatives and manage sales and distribution.

The new department will operate under the general direction of Bruce K. Brown, vice-president in charge of development, with William B. Plummer as manager.

Toilet Goods Sales Increase Over Last Year

Sales in the toilet goods field have increased over those of last year, as indicated by excise tax collections. In August, 1944, excise taxes collected by retailers on toilet preparations amounted to \$6,171,995. Treasury figures for the same month in 1945 amounted to \$7,372,094.

BENJ. FRENCH, INC.

ESSENTIAL OILS

AROMATIC CHEMICALS

ORIGINAL PERFUME BASES

FLORANTHUS

Novelty base giving a sweet, flowery lift to compositions, at the same time is very lasting. Excellent base for modern odors; does not discolor.

Price: \$16.00 per pound

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APPLE BLOSSOM

Breath of Spring

Snow-Drops on
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of
Nature's
Weave

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Apple Blossom
With distinctive NOTE

of
FRESHNESS

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PIPPIN

Performs like
Peach & Strawberry
Aldehydes
Gives Character
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to all Compositions

"Stilled Breath of Nature"

Imparts fragrance
of Actual Fruit,
adding
True Tone to
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Perfumes

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ISOPROPYL ALCOHOL

available for

SHAMPOOS: Isopropyl Alcohol aids in cleaning hair and scalp thoroughly and in leaving hair soft and lustrous.

HAIR AND SCALP PREPARATIONS: Isopropyl Alcohol as a vehicle for hair and scalp preparations aids the cleansing and antiseptic value of the tonics.

STERILIZING SOLUTIONS: 40% Isopropyl Alcohol will kill dried *Bacillus Coli* in $\frac{1}{4}$ minute. 50% Isopropyl Alcohol is equivalent to 70% ethyl alcohol for killing *Bacillus streptococcus* and *staphylococcus*.

BODY RUBS: Isopropyl Alcohol evaporates slowly, thereby prolonging the cooling effect when used in body rubs. Isopropyl Alcohol has no denaturants.

FACE AND HAND LOTIONS: Isopropyl Alcohol evaporates slowly; has little tendency to dry the skin, and aids in keeping the skin soft.

AFTER SHAVE LOTION: Isopropyl Alcohol is excellent for this product because it aids the after-cooling and skin-freshening qualities of the lotion.

Use 91% Isopropyl Alcohol and Release War Materials

STANDARD ALCOHOL COMPANY

26 BROADWAY

NEW YORK 4, N. Y.

Annual Soap Meeting to Be Held January 10 and 11

The 19th annual meeting of the Association of American Soap & Glycerine Producers will be held Jan. 11, at the Waldorf-Astoria, New York, N. Y. On Jan. 10, the Potash Soap Division will hold an all day meeting, and a meeting will again be held on the morning of Jan. 11.

The Program Committee of this division met Oct. 4, at the Hotel Vanderbilt, and worked out the following tentative program for discussion: The development of container linings for the shipment of potash soap products (this will probably consist of two discussions, one on drum linings and the other on can linings); synthetic detergents and potash soaps; what's ahead in Federal regulations for potash soap makers; would purer potash improve potash soaps and what can be done about it; how are phosphates used in potash soaps and why; does straight coconut oil make a better liquid hand soap than a blend; what are tailor made fatty acids—do they improve quality and reduce manufacturing costs of potash

soaps; and what are the principal problems encountered in selling potash soaps and how are they being solved.

It is intended that each subject be covered in twenty minutes, after which open discussion will be invited.

The business meeting will be held prior to the forum discussion.

Final and concrete plans have not yet been formulated, but it is anticipated that the meeting will be of outstanding importance, and will be well attended.

I. E. Chase Appointed to Staff of D. W. Hutchinson & Co.

As a first step in an expansion program, D. W. Hutchinson & Co., New York, N. Y., announces the appointment of Irving Edgar Chase as a member of its executive staff. Mr. Chase was formerly a director of sales for the William D. Neuberg Company and assistant export manager of Magnus Mabee & Reynard, Inc. For a number of years he was engaged in export and import work with W. R. Grace & Company both in New York and in California.

Creative Printmakers Opens Canadian Branch

The Creative Printmakers Group, New York, N. Y., has announced the recent opening of a Canadian branch at 2424 Yonge St., Toronto, Ontario.

The same decorating facilities are available at the new branch as at the home plant in New York City. Specialized work will be done in decorating packages and containers of glass, plastics, wood and metal.

Package manufacturers who wish to take advantage of the facilities of the Canadian branch should get in touch with Fred H. Edington, who is general manager, or Eric Hardman, who is sales manager.

TGA Scientific Section Meeting

The Scientific Section of the Toilet Goods Assn. is to meet Dec. 6 at the Biltmore Hotel, New York, N. Y.

A very interesting program has been arranged. Papers to be presented cover a wide range of subjects. Members and non-members are invited to attend.



CHALLENGE

The future is always a challenge which is met only by doing a bit better today.

The superior cosmetics we supply to a long list of national advertisers are the best proof of how we meet that challenge.

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Eyeshadow

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Rouge

•

Mascara

•

Powder, Etc.

**Many Firms Receive
"Brand Names Awards"**

The following companies are scheduled to receive 50-year awards from the Brand Names Research Foundation, Inc., for having served the American public continuously for fifty years: Packers Tar Soap, Inc., Mystic, Conn.; Lever Brothers Co., Cambridge, Mass.; The Mennen Co., Newark, N. J.; Colgate-Palmolive-Peet Co., Jersey City, N. J.; Pinaud, Inc., New York, N. Y.; Bristol-Myers Co., New York, N. Y.; William R. Warner & Co., New York, N. Y.; R. L. Watkins Co., New York, N. Y., and Merck & Co., Inc., Rahway, N. J.

Stephen F. Whitman & Son, Philadelphia, Pa., is entitled to a centennial certificate, and Andrew Jergens Co. to one showing 75 years of service.

**Personnel Changes
in Remus & Co.**

Edward Remus, president of Edward Remus & Co., Inc., New York, N. Y., has announced his retirement from active business, as of January,

1946. He will be succeeded in office by his son Richard Remus.

After several decades spent in serving the confectionery, perfume, soap, drug and chemical trades, Mr. Remus will enjoy a well earned rest, sharing his time between his farm in Connecticut and his home in New York City, but will continue to be available to his company in an advisory capacity as Chairman of the Board.

George N. Cox, who has been assisting Richard Remus in Kansas City, now becomes manager of the Western office. Henry H. Pine will be in charge of the Chicago office being opened the first of the year.

**Sayman Pure Vanilla Extract
Package Wins Award**

The judges of the "Spice Mill" 9th National Packaging Show have awarded a Blue Ribbon for excellence of design to the Sayman Pure Vanilla Extract package.

The judges were Margaret Eicks, Adelaide Hawley and Frank Gianinoto. The package is used by Sayman Products Co., St. Louis, Mo.

**Andrew Jergens to
Build New Plant**

Andrew Jergens Co., Cincinnati, Ohio, is to build a new plant, valued at \$2,000,000, at Burbank, Calif., on a tract of 40 acres.

**DCAT to Hold
Elections**

The 55th annual meeting and election of the Drug, Chemical and Allied Trades Section of the New York Board of Trade will be held Nov. 20. Dinner is to be at 6:30.

**Associated Products' New
Merchandising Plan**

Associated Products, Inc., Chicago, Ill., is to distribute White Shoulders, Menace and Gay Diversion through Evyan, Ltd., which it owns. Evyan and Madame Huntingford are to be a separate sales organization. Larry Mott is sales manager, E. E. Andersen is the Pacific Coast representative, J. A. McElliott is East Central representative, and Warren E. Kugler is West Central representative.

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U.S.I. CHEMICAL NEWS

November ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1945

Synthetic Short Cuts Via New Chemicals Predicted by U.S.I.

Possibilities Barely Tapped for Five New Organic Intermediates

New products, and economical synthetic short cuts to old ones are promised by five new chemicals which U.S.I. has produced by claisen-type condensations. Although exploration of their full possibilities has been delayed as a result of concentration on specific war problems, these five organic intermediates are on their way toward playing an important part in the synthesis of drugs, medicinals, dyes and specialties.

One substantial use of alpha acetyl butyrolactone is in the synthesis of vitamin B₁. 5-diethylamino pentanone-2 is an important intermediate in the manufacture of atebrein.

A third new organic chemical, ethyl alpha-

(Continued on next page)

X-Rays Give Chemists New Tool for Analysis

Closely following the discovery that atoms identify themselves by the amount of X-radiation they absorb, comes the development of special sensitive apparatus to measure this absorption, and give chemistry a new tool for rapid identification of the elements of which a substance is made.

The absorption of X-rays is approximately the same for each element, whether it is gaseous, liquid or solid. For instance, an atom of oxygen will have the same absorption whether it is in air, water or in sand.

To measure these differences in absorption with sufficient accuracy, an ultra-sensitive photo-electric cell of the multiplier type is used in connection with amplifiers in which weak signals are built up until it is possible to measure amounts of radiation with as little energy as one ten-billionth of a watt.

Enough work has already been done with the new method of analysis to show that for certain types of problems it offers clear advantages over older methods.

Atomic Chain Reaction Hinges on Ether-Purified Uranium Ore

With the publication of the official Smyth report on "Atomic Energy for Military Purposes," the news was out that one of the vital keys to the success of the entire atom-bomb project was ether extraction of uranium ore.

Uranium oxide of unprecedented purity was required to produce metal which would undergo a sustained chain reaction—the type of reaction necessary for either the explosion of U-235 or the production of plutonium. Experiments at the National Bureau of Standards showed that, by an ether extraction, all the impurities could be removed from uranyl nitrate in a single extraction. The report

High Color and Gloss Retention Afforded by New Alkyd Resin

S&W Aroplaz 1241 Now Available Without Restrictions for Architectural Enamels, Marine Finishes, Mill-Gloss Whites

Foreshadowing a whole range of interesting new alkyd resins which will be available to protective-coatings manufacturers as reconversion gets into full swing is S&W Aroplaz 1241, just announced by U.S.I. "1241" is a long-oil,

pure, oxidizing alkyd with properties which make it particularly well suited to a wide range of paints and enamels.

Important among its characteristics are the pureness of color and high gloss and color retention which "1241" imparts to white enamels. In this respect, as well as in brushing qualities, exposure resistance and durability, it is superior to comparable finishes made with conventional alkyls of similar oil length. Films made with Aroplaz 1241 are found to be harder and to show greater resistance to abrasion, water, alkali, solvents and oils.

Relatively Non-Reactive

The new resin is a relatively non-reactive vehicle, which may be used with normal percentages of the usual basic pigments. It blends well with a wide variety of drying oils, varnishes and other alkyls. Blended with oil paints, it increases their hardness, speeds up drying and improves gloss retention and durability.

Exterior Applications

Alone or extended slightly with oils, "1241" makes excellent trim and trellis paints, as its durability is better than conventional long-oil alkyd resins. While it may be formulated with zinc oxide, it should be noted that inclusion of zinc oxide results in a slight loss of initial gloss and that gloss retention is also affected by the formation of the characteristic haze. However, gloss and gloss retention remain noticeably superior to that of coatings formulated with regular alkyls.

Supplies of S&W Aroplaz 1241 are not subject to allocation and are fully available for any application. Samples and additional data may be had on request.



Architectural enamels formulated with "1241" will feature pureness of color and color and gloss retention not approached by prewar products.

Better Marbleized Finishes

Layers of paint or enamel in several colors are floated on the surface of a tank filled with an aqueous solution. Articles are dipped into the tank through the layers of paint and pick up a coating of streaks of different colors in a marble-like effect, which wrinkles on drying, according to the patent.

Detects Toxic Gases

Toxic gases can be detected by bubbling air suspected of containing them through an ionizable solution such as ethanol and water, according to a recent patent. After the toxic gases have been absorbed, changes in the electrical resistance of the liquid indicate the presence of a soluble ionizable gas.

SPECIFICATIONS

| | |
|-----------------------------|------------------|
| Solution in Mineral Spirits | 69-71% N.V. |
| Viscosity (G.H.) | Y-Z ₁ |
| Acid Number | 6-10 |
| Color (G.H. 1933) | 7-9 |
| Wt./gallon at 25° C | 8.05-8.15 lbs. |

Solubility: Complete in petroleum and coal-tar hydrocarbons. Insoluble in ethanol. Compatible with wide range of vegetable drying oils, varnishes and other alkyls.



This smart Higgins "PT Junior" and many other craft will be a large market for durable marine enamels formulated with such S&W resins as "1241".

states "The use of this method removed the great bulk of the difficulties in securing pure oxide and pure materials for the production of metal."

Significantly, the report adds "This oxide is now used as a starting point for all metal production, and no higher degree of purity can be expected on a commercial scale. In fact, it was a remarkable achievement to have developed and put into production on a scale of the order of one ton per day a process for transforming grossly impure commercial oxide to oxide of a degree of purity seldom achieved even on a laboratory scale."

Synthetic Short Cuts

(Continued from preceding page)

oxalpropionate, has six thought-provoking characteristics: 1. It loses carbon monoxide and yields diethyl methylmalonate on distillation; 2. Heated with ammonia, it forms alpha-methyl-beta-imino succinimide; 3. Boiled with alcoholic potassium hydroxide, it breaks down into propionic and oxalic acids, and alcohol; 4. Heated with ethyl iodide and sodium ethoxide, it yields alpha-methyl-alpha-ethyl-oxalpropionic ester; 5. Heating with dilute sulfuric acid produces propionylformic acid, alcohol, and carbon dioxide; 6. Hydrogenation gives diethyl alpha-hydroxy-beta-methylsuccinate, which yields 3-methyl 1, 2-butanediol, 2-methyl 1, 4-butanediol, alcohols and water.

The following physical constants of these new chemicals may suggest further uses and applications. Samples are available on request.

α-ACETYL BUTYRO LACTONE

Mol. Wt., 128. Sp. Gr., 1.185-1.189 @ 20/20° C. Refractive Index, 1.460 @ 20° C. Boiling Pt., 121-122° C. @ 10 mm. Hg. abs. Colorless liquid. Suggested Uses: Organic synthesis.

5-DIETHYLAMINO PENTANONE-2
(Noval Ketone)

Mol. Wt., 157. Sp. Gr., 0.865 @ 20/20° C. Refractive Index 1.435 @ 20° C. Boiling Pt., 90-92° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in contact with air. Suggested Uses: Organic chemical synthesis.

ETHYL ALPHA-OXALPROPIONATE

Mol. Wt., 202. Sp. Gr., 1.0977 @ 20/20° C., Refractive Index, 1.433 @ 20° C., Boiling Pt., 108-109 @ 5.5 mm. Hg. abs. Color light yellow to colorless.

ACETYL PROPYL CHLORIDE
(5-Chloro Pentanone-2)

Mol. Wt., 120.5. Sp. Gr., 1.054 @ 20/20° C. Refractive Index, 1.440 @ 20° C. Boiling Pt., 71-72° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in presence of air. Suggested Uses: Organic synthesis.

METHYL CYCLOPROPYL KETONE

Mol. Wt., 84. Sp. Gr., 0.903 @ 20/20° C. Refractive Index, 1.426 @ 20° C. Boiling Pt., 111-113° C. @ 760 mm. Hg. Colorless liquid. Suggested Uses: Organic synthesis.

Acetone Process Cuts Costs of Mercuric Nitrates

Costs of mercuric nitrates, used as disinfectants and bactericides, can be materially lowered, according to claims made in a new patent.

Mercury diphenyl, dissolved in acetone, is mixed with a concentrated solution of mercuric nitrate in dilute nitric acid and acetone. Upon heating this mixture, the phenyl mercuric nitrate begins to precipitate at 45° C. After the reaction is complete, the phenyl mercuric nitrate is separated by filtration, and additional amounts are secured by evaporating the mother liquor.

Increased Water Content for Zein Solutions

Zein solutions, used in textile and paper finishes, adhesives, and pigment vehicles, can be given greater dispersion in water, according to the claims made by the inventor of a new process for preparing and using zein solutions. The paste described in the patent is composed of zein, ethanol, sulphated stearyl alcohol, and water. It is described as being dilutable with volumes of water far in excess of the quantity which would cause zein precipitation with ordinary mixtures.

Ethanol-Acetone Extract Aids Tetanus Treatment

Curare, a potent and deadly alkaloid used with lethal effects as an arrow-tip poison by South American Indians, and by mystery-story writers to confuse the plot, has emerged as an agent to alleviate the agonizing pain of tetanus. Action of the curare extract used is to selectively depress the receptive mechanism of the skeletal muscles.

The active alkaloid used in this treatment, a foreign paper says, is extracted from any of the three forms of gummy, black, crude curare by dissolving in ethanol, evaporating the solution, re-dissolving the residue in water and precipitating out the inert matter with acetone. In addition to potentialities of this curare extract in the treatment of tetanus, it has long been known as a powerful anaesthetic. Its use is now suggested in the treatment of hydrophobia and in lessening the after-effects of shock-therapy treatment of certain mental disorders.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Protective finishes, produced by an oxidizing process, are said to be applicable to copper alloys, brass, zinc, iron and steel. Finishes are said to be stable, long-lived and wear resistant. Colors, in addition to black, can be applied to copper and brass. Company offers a similar treatment for aluminum products which they say produces a hard, gray corrosion-inhibiting surface. (No. 996)

Acid-and-alkali-proof cement, claimed to be inert to all alkalis, fats and grease, and most acids, is available for ceramic lining constructions. It is said to be abrasion resistant, quick setting and easy to use. (No. 997)

A new liquid adhesive, for joining metals, wood, plastics and glass is said to combine exceptional coverage with high strength. Curing is done under heat and pressure. (No. 998)

A new silicon lubricant, for valves handling steam, hot gases, high vacuum, and most dilute mineral acids, is offered with the statement that its viscosity remains unchanged from 40 to 400 F. (No. 999)

A replacement for China Wood Oil is offered in the form of a modified linseed oil claimed to body rapidly in the varnish kettle, to be compatible with resins used to produce durable, fast drying varnish films. (No. 1000)

A "harnessed" formaldehyde is offered to provide better control of the reaction of formaldehyde with various chemicals, including phenols, amines and hydrocarbons. The new formaldehyde is said to increase the yield and improve the quality of end products. (No. 1001)

A non-inflammable plastic is described as being thermosetting, and having high optical qualities, electrical resistance and resistance to abrasion, oils and most chemicals. Its refractive index is about 1.57. (No. 1002)

To dustproof concrete floors, a liquid is available which is designed to fill the pores, and react with the cement to form a tough non-dusting surface that resists the action of moisture and chemicals. It is applied by brush or sprinkler. (No. 1003)

An anti-fog film, claimed to penetrate the submicroscopic pores of glass and thus prevent fog, frost, and steam accumulation, is now on the market. It is applied by spreading on both sides of the surface, then polishing. (No. 1004)

Improved plastic production is claimed for a new organic peroxide, announced as having a higher oxygen content, being purer, and having great utility as a polymerization catalyst for production of plastics where no catalyst diluent can be tolerated. (No. 1005)

Bleaching wool, rayon and cotton, without weakening the fabric, is a new application announced for an organic chlorine compound. (No. 1006)

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Specially Denatured—all regular and anhydrous formulas
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Ansol PR

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Butyl Acetate
Ethyl Acetate

OXALIC ESTERS

Diethyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS

Diamyl Pthalate
Dibutyl Pthalate
Diethyl Pthalate

OTHER ESTERS

*Diethyl Carbonate
Ethyl Chloroacetate
Ethyl Formate

INTERMEDIATES

Acetoacetanilide
Acetoacet-ortho-anisilide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

ETHERS

Ethyl Ether
Ethyl Ether Absolute—A.C.S.

FEED CONCENTRATES

*Cubay B-G
*Cubay Special Liquid
*Vacatone 40

ACETONE

Chemically Pure

RESINS

S&W Ester Gums—all types
S&W Congo Gums—raw, fused & esterified
S&W *Aroclor—alkyls and allied products
S&W *Aroclor—pure phenolics
S&W *Aroclor—modified types
S&W Natural Resins—all standard grades

OTHER PRODUCTS

Cellulons
Ethylene Glycol
Nitrocellulose Solutions
Ethylene Urethane

*Registered Trade Mark

Penick Purchases Research Laboratory

S. B. Penick & Co., New York, N. Y., announces the purchase of a research laboratory, erected by the Port of New York Authority some years ago.

The Penick company has immediately occupied the property, centering all its research laboratory work in this new location under the direction of Dr. W. G. Bywater, general research director.

The property occupies a plot 100 by 150 feet on West Side Avenue and Fox Street, Jersey City, N. J. The building is of steel and concrete construction, three floors, and designed by a leading architect for laboratory research work exclusively.

In this location the company plans to broaden, in a substantial manner, the scope of its present research activities.

Helena Rubinstein to Give Grooming and Make-up Course

Under the sponsorship of City College, New York, N. Y., Helena

Rubinstein will give a series of eight weekly lectures on the art of make-up and grooming.

Subjects to be covered include individual skin analysis and skin care, correct application of make-up for every occasion, personal hygiene as an essential adjunct to good grooming, fashion and color harmony in clothes and make-up.

National Paper Box Assn. Announces Convention

The next annual convention of the National Paper Box Manufacturers' Association will be held at The Drake in Chicago, Ill., May 12 to 15, it has been announced by A. M. Bond, president of the association.

New Firm Organized Under Name of Blue Crest Laboratories

Blue Crest Laboratories recently started the manufacture of a complete line of cosmetics, and at the present time is in the process of organizing and setting up a plant. The new firm is located at 5317 Fort Hamilton Parkway, Brooklyn, N. Y.

Northam Warren Expects to Increase Personnel

Northam Warren Corp., Stamford, Conn., expects an increase in the number of employees to 55 per cent above that of the pre-war period, as soon as materials become fully available.

At present the company is employing 15 per cent more persons than when the war began. Construction has begun on a new building which will add 20,000 square feet of floor space to the 170,000 in the main building.

Federation of Jewish Philanthropies Drive

The wholesale Cosmetic and Drug Division of the Federation of Jewish Philanthropies of New York has announced appointments to key committees for its industry-wide drive in support of the Federation's current \$30,000,000 appeal.

Melvin A. Block will serve as overall division chairman, with the following associate chairmen: B. Harry Bedanes; Herman L. Brooks; and William F. Murtha.

BRIDGEPORT METAL CONTAINERS

VANITY CASES

ROUGE CASES

PASTE ROUGE CONTAINERS

LIPSTICK HOLDERS (All Types)

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EYEBROW PENCIL HOLDERS

BOTTLE CAPS

JAR CAPS

METAL NOVELTIES TO ORDER

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Liberal Arrangement—No Investment

We seek a man who is not a starter, but has already arrived. He knows profitable perfumery promotion and is on speaking terms with buyers of leading stores from coast to coast. He is probably now identified as the sales and merchandising mainspring behind a quality perfumery organization, but would consider a new connection which gave larger scope for his talents and the opportunity to substantially increase his income.

As evidence of our faith in the right man, we would place him in full command of the operations of our newly formed company which during the coming year will launch a new line of quality French imported perfumes and colognes for distribution through the better stores of America. Our program calls for the establishment of a Fifth Avenue salon, and an aggressive campaign of regional and national advertising.

The man we select will function on a liberal arrangement without an investment of his own, and depending on his ability should develop a foreseeable income of \$25,000 the first year. Applications will be treated in strictest confidence.

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MARKET REPORT

Glycerin Situation Remains Tight

SUSPENSION of price ceilings on vegetable waxes, a further decline in glycerin stocks causing refiners to advance selling schedules to the maximum OPA levels, and a general tightening in the supply of high grade alcohol were but a few of the many interesting developments that took place in the raw materials market over the past month.

GLYCERIN STOCKS DECLINING

Normally glycerin refiners should be accepting contracts covering deliveries over the first half of next year, but with stocks declining at the rate of 2,000,000 pounds a month, suppliers are only willing to accept orders for nearby delivery. While the disappearance of 2,000,000 pounds of glycerin a month is only about 1 per cent of a total years production, nevertheless, it is generally believed that total stocks in the United States have by this time fallen below the 50,000,000 pound level which is regarded by some as a rather serious situation. One refiner has expressed the opinion that the supply position will probably improve shortly after the turn of the year but in other directions it is feared the tight situation will continue past the middle of next year.

BEESWAX PRICES RISE

Shipping prices on beeswax moved up several cents a pound following the suspension of revised MPR 264 and Amendment 64 to Supplementary Order 129, covering ceiling prices for imported carnauba wax, ouricury, candelilla, and imported and domestic beeswax either crude, refined or bleached. There was a general tendency on the part of importers to resist the upward trend by limiting purchases but in view of the exceedingly tight supply position that has existed in beeswax as well as various

other types of waxes it is quite likely that shipping prices will continue to work higher.

MENTHOL MARKET FIRMER

After declining to \$3.90 per pound, the local menthol market developed a firmer tone reflecting a complete reversal in the trend of prices at the primary center. It becomes increasingly difficult to make predictions regarding the future trend of the local market, but a significant development over the past few weeks was the fact that prices here failed to advance as quickly as those in the Brazilian market. At the close of the month, spot prices ranging from \$4.50 to \$5.00 were actually below replacement costs which figured at between \$10 to \$11 per kilo f.o.b., Brazil. Based on private advices from China there are between 100 to 200 cases of menthol available for immediate shipment.

Removal of allocation orders governing large numbers of major chemical raw materials, the easier trend in oil lemongrass, and prospects of the appearance of fresh lots of bois de rose oil all served to have an easier influence upon the overall picture in aromatic chemicals. Amyl cinnamic aldehyde, citral, and indol were offered at more favorable prices.

SUGAR SUPPLIES UNCERTAIN

Buying of essential oils for the account of confectioners and extract manufacturers continued to be influenced by the uncertainty regarding sugar supplies. It is anticipated, however, that improved conditions will be noted after the turn of the year. Reports regarding the possible release of a large quantity of lemon oil by the government failed to have the slightest effect upon the overall position on spot. Some trade factors are inclined to take on a decidedly firmer outlook in orange. Any im-

provement in sugar supplies will undoubtedly be reflected in an increased consumption of this oil, it is explained, and reports from Florida indicated that because of high labor costs, it will be necessary to obtain better prices.

CITRIC ACID DEMAND ACTIVE

An active export demand was reported for citric acid over the past month. The general supply situation, according to producers, has eased somewhat but resellers with small parcels on hand encountered little difficulty in obtaining a reasonable premium for their goods. Among the tartrates, demand for the acid proved rather disappointing. Some imported material was being offered at 69 to 69½ cents per pound. Cream of tartar continued to be available in some directions at quotations ranging from 2 to 3 cents per pound below manufacturers selling schedules.

Approximately two-thirds of the last arrival of vanilla beans from Madagascar are earmarked for consumption, thus leaving only about forty tons to be disposed of in the open market. Threat of a shortage of high grade alcohol and the unusually tight situation in sugar were among the reasons given for the absence of any unusual buying interest in the spot market. No further large arrivals are expected from Madagascar for some time, however, and should consumption improve over the next quarter an unusually firm situation is likely to prevail. The new export quota will not be established in Madagascar until sometime in July, 1946, and because of a short crop and high prices little relief can be expected from Mexico. The crop outlook in Mexico is about the same as it was last year at which time 150,000 to 175,000 pounds were produced.



Karl Voss Corporation
HOBOKEN NEW JERSEY

*Natural and
Aromatic Materials*



Special Creations

**for PERFUMES
COSMETICS and
SOAPS**

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SOLE REPRESENTATIVES

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GRASSE, FRANCE

- ABSOLUTE SUPREME FLOWER ESSENCE
- SURFINE ESSENTIAL OILS
- RESINOIDS

Tombarel
PRODUCTS CORPORATION

L. J. ZOLLINGER, PRESIDENT

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IN CHICAGO:

A. C. DRURY & CO., INC. 219 East No. Water Street

PRICES IN THE NEW YORK MARKET

(Quotations on these pages are those made by local dealers, but are subject to revision without notice.)

| ESSENTIAL OILS | | | | | |
|-----------------------------|---------|--------|--------------------------|---------|--------|
| Almond Bit, per lb. | 3.50@ | 4.00 | Citronella, Ceylon | 1.70@ | 1.85 |
| FFPA | 4.75@ | 5.10 | Java | 3.25 | Nom'l |
| Sweet True | 1.25@ | 1.50 | Cloves, Zanzibar | 1.75@ | 1.80 |
| Apricot Kernel | .50 | Nom'l | Coriander | 25.00@ | 28.50 |
| Amber, rectified | 2.25 | Nom'l | Imitation | 12.00@ | 14.00 |
| Angelica Root | 125.00@ | 150.00 | Croton | 4.25@ | 4.80 |
| Anise, U. S. P. | 4.00 | Nom'l | Cumin | 9.00@ | 11.00 |
| Imitation | 1.75@ | 2.10 | Dillseed | 8.00 | Nom'l |
| Aspic (spike) Span. | 2.85@ | 3.25 | Erigeron | 2.25@ | 5.00 |
| Avocado | 1.05@ | 1.25 | Eucalyptus | 1.25@ | 1.35 |
| Bay | 1.40@ | 1.75 | Fennel, Sweet | 4.50 | Nom'l |
| Bergamot | 9.00@ | 10.00 | Geranium, Rose, Algerian | 15.50@ | 17.00 |
| Artificial | 4.00@ | 9.25 | Bourbon | 16.50@ | 18.00 |
| Birch, sweet | 2.50@ | 5.00 | Turkish | 5.50@ | 5.85 |
| Birchtar, crude | 2.25 | Nom'l | Ginger | 13.00@ | 15.00 |
| Birchtar, rectified | 4.25 | Nom'l | Guaiac (Wood) | 4.00@ | 4.80 |
| Bois de Rose | 5.00 | Nom'l | Hemlock | 2.65@ | 3.34 |
| Cade, U. S. P. | .90@ | 1.20 | Substitute | .55@ | .60 |
| Cajuput | 3.00 | Nom'l | Juniper Berry | 9.00@ | 10.25 |
| Calamus | 22.00@ | 25.00 | Juniper Wood, imitation | 1.00@ | 1.25 |
| Camphor "white," dom. | .25@ | .30 | Laurel | 5.00 | Nom'l |
| Cananga, native | 11.00@ | 12.50 | Lavandin | 8.25 | Nom'l |
| Rectified | 13.50@ | 15.00 | Lavender, French | 16.50@ | 17.50 |
| Caraway | 11.25@ | 15.50 | Lemon, Calif. | 3.25@ | |
| Cardamon | 18.00@ | 20.00 | Lemongrass | 2.35@ | 2.55 |
| Cassia, rectified, U. S. P. | 12.00 | Nom'l | Limes, distilled | 7.00@ | 7.75 |
| Imitation | 3.75@ | | Expressed | 13.00@ | 15.00 |
| Cedar leaf | 1.10@ | 1.25 | Linaloe | 4.75@ | 5.00 |
| U. S. P. | 2.65@ | 3.34 | Lovage | 95.00 | Nom'l |
| Cedar wood | 1.00@ | 1.25 | Marjoram | 7.25@ | 7.50 |
| Celery | 17.25@ | 20.00 | Neroli, Bigarde P. | 300.00@ | 375.00 |
| Chamomile | 150.00 | Nom'l | Petale, extra | 265.00@ | 300.00 |
| Cinnamon bark oil | 32.50@ | 35.00 | Olibanum | 5.00@ | 5.75 |
| | | | Opopanax | 30.00@ | 38.00 |
| | | | Orange, bitter | 3.90@ | 3.95 |
| | | | Brazilian | 1.50@ | 1.65 |
| | | | Calif., exp. | 1.65@ | 2.00 |
| | | | Orris Root, abs. (oz.) | 135.00@ | |
| | | | Artificial | 36.00@ | 40.00 |
| | | | Pennyroyal, Amer. | 3.50@ | 3.80 |
| | | | European | 3.65@ | 3.85 |
| | | | Peppermint, natural | 6.50@ | 6.75 |
| | | | Redistilled | 6.85@ | 7.10 |
| | | | Petitgrain | 2.25@ | 2.50 |
| | | | Pimiento Berry | 7.00@ | 7.60 |
| | | | Pinus Sylvestris | 4.25@ | 5.00 |
| | | | Pumillonis | 4.25@ | 4.75 |
| | | | Rose, Bulgaria (oz.) | 30.00@ | 40.00 |
| | | | Synthetic, lb. | 45.00@ | 55.00 |
| | | | Rosemary, Spanish | 1.45@ | 1.60 |
| | | | Sage | 3.00@ | 3.50 |
| | | | Sage, Clary | 25.00@ | 30.00 |
| | | | Sandalwood, N. F. | 7.00@ | 7.25 |
| | | | Sassafras, natural | 2.00@ | 2.15 |
| | | | Artificial | .90@ | 1.10 |
| | | | Snake root | 12.00 | Nom'l |
| | | | Spearmint | 4.00 | Nom'l |
| | | | Thyme, red | 2.75@ | 3.00 |
| | | | White | 3.05@ | 3.80 |
| | | | Valarian | 40.00 | Nom'l |
| | | | Vetivert, Java | 50.00 | Nom'l |
| | | | Bourbon | 30.00@ | 35.00 |
| | | | Wintergreen | 4.85@ | 8.50 |
| | | | Wormseed | 5.25 | Nom'l |
| | | | Ylang Ylang, Manila | 38.00 | Nom'l |
| | | | Bourbon | 13.00@ | 20.00 |

(Continued on page 101)

NORTHWESTERN

Ethyl Formate

Amyl Formate

N-Butyl Formate

Iso Butyl Formate

Will give you best results when these esters
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● Beehive Brand Beeswax is 100% pure . . . uniform in texture, and white in color. Selected from the finest grades of crude beeswax, it is carefully tested for purity and uniformity before it is accepted and refined. After thorough processing and clarifying, it is sun-bleached to a high degree of whiteness.

● Uniformity of Beehive Brand Beeswax will keep your product always up to the high standard you set for it. The quality and uniformity never change. It is free from adulterants and imperfections of any kind.

And back of every tablet of Beehive Brand Beeswax stands the reputation of the manufacturer.



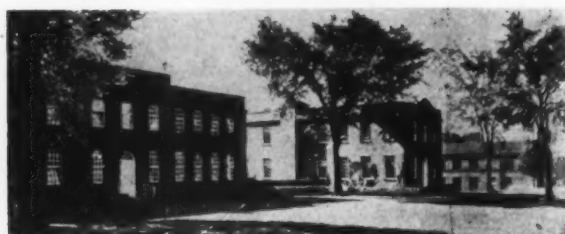
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Manufacturers of
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TUBES since
1898

TURNER WHITE METAL CO., Inc. . . . New Brunswick, N. J.

(Continued from page 99)

TERPENELESS OILS

| | | |
|--------------|--------------|-------|
| Bergamot | 25.00 | Nom'l |
| Grapefruit | 65.00@ | |
| Lavender | 28.00 | Nom'l |
| Lemon | 40.00@ 45.00 | |
| Lime, ex. | 85.00@100.00 | |
| Distilled | 60.00@ 67.00 | |
| Orange sweet | 82.00@112.00 | |
| Peppermint | 12.25@ 13.50 | |
| Petitgrain | 3.50@ 3.75 | |
| Spearmint | 5.00@ 6.00 | |

DERIVATIVES AND CHEMICALS

| | | |
|-------------------------|--------------|-------|
| Acetaldehyde 50% | 1.90@ 2.75 | |
| Acetophenone | 1.70@ 1.80 | |
| Alcohol C 8 | 7.50 | Nom'l |
| C 9 | 14.00 | Nom'l |
| C 10 | 7.75@ 12.00 | |
| C 11 | 11.50 | Nom'l |
| C 12 | 7.20@ 8.50 | |
| Aldehyde C 8 | 20.00@ 25.00 | |
| C 9 | 27.00@ 30.00 | |
| C 10 | 17.50@ 20.00 | |
| C 11 | 22.00 | Nom'l |
| C 12 | 25.00@ 30.00 | |
| C 14 (so called) | 8.00@ 9.50 | |
| C 16 (so called) | 7.65@ 8.25 | |
| Amyl Acetate | .55@ .75 | |
| Amyl Butyrate | .90@ 1.10 | |
| Amyl Cinnamate | 4.50@ 5.80 | |
| Amyl Cinnamate Aldehyde | 2.35@ 2.80 | |
| Amyl Formate | 1.00@ 1.50 | |
| Amyl Phenyl Acetate | 3.75@ 4.00 | |
| Amyl Salicylate | .80@ 1.00 | |
| Amyl Valerate | 2.10@ 2.75 | |
| Anethol | 2.80@ 3.15 | |
| Anisic Aldehyde | 3.35@ 4.00 | |
| Benzophenone | 1.15@ 1.30 | |
| Benzyl Acetate | .75 | Nom'l |

| | | |
|-----------------------|--------------|-------|
| Benzyl Alcohol | 1.85 | Nom'l |
| Benzyl Benzoate | 1.10 | Nom'l |
| Benzyl Butyrate | 2.15 | Nom'l |
| Benzyl Cinnamate | 5.15 | Nom'l |
| Benzyl Formate | 2.50@ 3.75 | |
| Benzyl-Iso-eugenol | 10.25 | Nom'l |
| Benzylidenacetone | 2.25@ 3.40 | |
| Borneol | 1.80 | Nom'l |
| Bornyl Acetate | 2.25 | Nom'l |
| Bromstyrol | 6.25@ | |
| Butyl Acetate | .18% @ .19 | |
| Cinnamic Acid | 3.75@ 4.50 | |
| Cinnamic Alcohol | 3.65@ 3.85 | |
| Cinnamic Aldehyde | 1.75@ 2.00 | |
| Cinnamyl Acetate | 10.50@ 12.00 | |
| Cinnamyl Butyrate | 12.00@ 14.00 | |
| Cinnamyl Formate | 10.00@ 13.00 | |
| Citral, C. P. | 5.90@ 6.35 | |
| Citronellal | 6.25@ 7.00 | |
| Citronellyl Acetate | 8.60@ 9.20 | |
| Coumarin | 3.00@ 3.50 | |
| Cuminic Aldehyde | 8.00@ 11.25 | |
| Diethylphthalate | .24 | Nom'l |
| Dimethyl Anthranilate | 4.55@ 5.00 | |
| Ethyl Acetate | .25@ .35 | |
| Ethyl Anthranilate | 5.50@ 7.00 | |
| Ethyl Benzoate | .90@ 1.15 | |
| Ethyl Butyrate | .75@ .90 | |
| Ethyl Cinnamate | 3.50 | Nom'l |
| Ethyl Formate | .75@ .95 | |
| Ethyl Propionate | .80 | Nom'l |
| Ethyl Salicylate | .90@ 1.00 | |
| Ethyl Vanillin | 5.25@ 6.00 | |
| Eucalyptol | 2.65@ 2.85 | |
| Eugenol | 3.00@ 3.50 | |
| Geraniol, dom. | 5.50 | Nom'l |
| Geranyl Acetate | 3.50@ 3.60 | |
| Geranyl Butyrate | 8.50 | Nom'l |
| Geranyl Formate | 13.40 | Nom'l |
| Heliotropin, dom. | 6.00 | Nom'l |
| Hydrotopic Aldehyde | 15.00@ 18.00 | |

| | | |
|--------------------------------|--------------|-------|
| Hydroxycitronellal | 8.50 | Nom'l |
| Indol, C. P. | 19.50@ 22.00 | |
| Iso-borneol | 1.10 | Nom'l |
| Iso-butyl Acetate | 1.25@ 2.00 | |
| Iso-butyl Benzoate | 1.50@ 2.60 | |
| Iso-butyl Salicylate | 2.70@ 3.00 | |
| Iso-eugenol | 4.00 | Nom'l |
| Iso-safrol | 3.00 | Nom'l |
| Linalool | 8.00@ 8.75 | |
| Linalyl Acetate 90% | 8.00@ 8.50 | |
| Linalyl Anthranilate | 15.00@ | |
| Linalyl Benzoate | 10.50@ | |
| Linalyl Formate | 9.25@ 12.00 | |
| Menthol, Brazilian | 4.50@ 5.00 | |
| Methyl Acetophenone | 1.80 | Nom'l |
| Methyl Anthranilate | 2.25@ 2.40 | |
| Methyl Benzoate | .60@ 1.00 | |
| Methyl Cellulose, f.o.b. ship- | | |
| ping point | .60 | Nom'l |
| Methyl Cinnamate | 3.00 | Nom'l |
| Methyl Eugenol | 3.50@ 6.75 | |
| Methyl Heptenone | 3.50 | Nom'l |
| Methyl Heptene Carbonate | 45.00@ 60.00 | |
| Methyl Iso-eugenol | 5.85@ 10.00 | |
| Methyl Octine Carbonate | 24.00@ 30.00 | |
| Methyl Paracresol | 2.50 | Nom'l |
| Methyl Phenylacetate | 3.50@ 4.00 | |
| Methyl Salicylate | .37@ .38 | |
| Musk Ambrette | 4.25@ 4.50 | |
| Ketone | 4.35@ 4.80 | |
| Xylene | 1.65@ 2.50 | |
| Neroline (ethyl ether) | 2.00@ 3.15 | |
| Paracresol Acetate | 2.55@ 3.00 | |
| Paracresol Methyl Ether | 2.60@ 2.85 | |
| Paracresol Phenyl-acetate | 6.50@ 8.50 | |
| Phenylacetaldehyde 50% | 3.00 | Nom'l |
| 100% | 5.00 | Nom'l |
| Phenylacetic Acid | 3.00@ 3.75 | |
| Phenylethyl Acetate | 2.50 | Nom'l |
| Phenylethyl Alcohol | 2.80@ 3.00 | |

(Continued on page 103)

PLYMOUTH CRYSTAL "E" WHITE OIL

This oil has been the standard for many of America's very oldest cream manufacturers since their origin. It is water-white and crystal-pure . . . odorless and tasteless . . . of U. S. P. Acid Test and free of fluorescence . . . especially refined for the cosmetic industry and as pure as a mineral oil can be made. Because of its extra lightness you should specify it for the soft, light, fluffy creams demanded today.

Other mineral oils of heavier body if desired.

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All Petrolatums are refined and straight filtered from Pennsylvania Crude. None are acid treated and all are long fiber and of U. S. P. grades.

Both soft, low melting point consistencies and pharmaceutical grades . . . as well as the regular grades for the drug and cosmetic industry. All grades are offered from Snow White to Amber.

Manufacturers of

CHOLESTEROL ABSORPTION BASES

★ AMERCHOL ★ for PHARMACEUTICAL and COSMETIC preparations

Our Amerchol Absorption Bases possess inherent emollient and absorption properties because of their high free Cholesterol content.

- Facilitate the penetration and absorption of incorporated therapeutic agents.
- Recommended for ease of emulsification.
- Absorb unusually large amounts of water.
- Form pure white water-in-oil emulsions, completely stable under widely varied conditions.
- Form elegant products of rich texture and consistency.

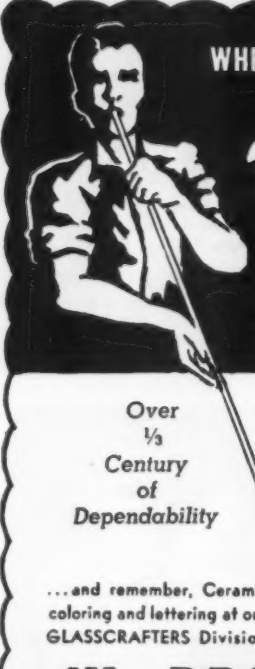
We also manufacture—

Cholesterol C. P.
Industrial Penetrants
Emulsifiers
Ointment Bases
Softening and Dispersing Agents

AMERCHOL products are manufactured from specially processed cholesterol and other sterols.

- Will not oxidize, nor turn rancid. Unaffected by electrolytes.
- Retain their properties at extreme temperatures.
- Are for neutral, acid and alkaline creams, ointments, lotions.

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CYCLONOL

CHARACTERISTIC ODOR and COOLING EFFECT OF MENTHOL

Cyclonol is chemically 1-methyl-3-dimethyl-cyclohexanol-(5). Graphically the structural formula is given in Fig. 1. It may be considered a lower homologue of symmetric or meta Menthol which has the structural formula shown in Fig. 2.

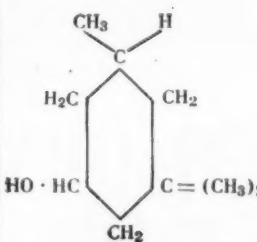


FIG. 1

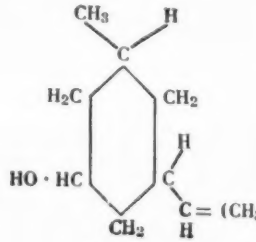


FIG. 2

Cyclonol replaces Menthol satisfactorily in shaving creams and lotions, liniments, analgesic balms, ointments and similar preparations. It has also been accepted by the U. S. Treasury Department as a Denaturant for alcohol in place of Menthol U.S.P.

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| ROUGES | LOTIONS |
| FACE POWDERS | SHAMPOOS |
| MASCARA | CREAMS |
| SOAPS | Etc. |

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Western Distributor: A. C. Drury & Co., 219 E. North Water St., Chicago, Ill.

(Continued from page 101)

| | | |
|--------------------------|--------|-------|
| Phenylethyl Anthranilate | 16.00@ | |
| Phenylethyl Butyrate | 3.65@ | 4.00 |
| Phenylethyl Propionate | 3.45@ | 3.90 |
| Phenyl Valerianate | 16.00@ | 17.50 |
| Phenylpropyl Acetate | 10.00 | Nom'l |
| Santalyl Acetate | 20.00@ | 22.50 |
| Scatol C. P. (oz.) | 5.35@ | 6.00 |
| Styrolal Acetate | 2.50@ | 3.00 |
| Vanillin (clove oil) | 2.60 | Nom'l |
| (guaiacol) | 2.35 | Nom'l |
| Lignin | 2.35 | Nom'l |
| Vetivert Acetate | 25.00 | Nom'l |
| Violet Ketone Alpha | 18.00 | Nom'l |
| Beta | 15.00 | Nom'l |
| Methyl | 6.50 | Nom'l |
| Yara Yara (methyl ester) | 2.00@ | 3.10 |

BEANS

| | | |
|---------------------|--------|------|
| Tonka Beans Surinam | .80@ | .95 |
| Angostura | 1.50@ | 1.85 |
| Vanilla Beans | | |
| Mexican, whole | 11.00@ | |
| Mexican, cut | 10.00@ | |
| Bourbon | 8.50@ | 9.75 |
| Tahiti | 3.35@ | 3.75 |

SUNDRIES AND DRUGS

| | | |
|-----------------------------|---------|---------|
| Acetone | .07@ | .07 1/2 |
| Almond meal | .25@ | .35 |
| Ambergris, ounce | 12.00@ | 16.00 |
| Balsam, Copaiba | .95@ | 1.10 |
| Peru | 1.25@ | 1.35 |
| Beeswax bleached, pure | | |
| U. S. P. | .58 | Nom'l |
| Yellow, refined | .53 1/2 | Nom'l |
| Bismuth, subnitrate | 1.20@ | 1.22 |
| Borax, crystals, carlot ton | 55.50@ | 58.00 |
| Boric Acid, U. S. P., cwt. | 6.95@ | 7.55 |

| | | |
|--------------------------------|----------|---------|
| Calamine | .18@ | .20 |
| Calcium, phosphate | .08@ | .08 3/4 |
| Phosphate, tri-basic | .09@ | .10 |
| Camphor, domestic | .69@ | .84 |
| Castoreum | 13.00@ | 17.00 |
| Cetyl Alcohol | 1.75@ | 1.80 |
| Chalk, precip. | .03 1/2@ | .06 1/2 |
| Cherry Laurel Water, jug. gal. | 3.60@ | 4.00 |
| Citric Acid | .21@ | .24 |
| Civet, ounce | 18.00@ | 25.00 |
| Clay, colloidal | .07@ | .15 |
| Cocoa, Butter, lump | .25 1/2@ | .27 |
| Cyclohexanol (Hexalin) | .30@ | .50 |
| Fuller's Earth, ton | 15.00@ | 22.00 |
| Glycerin, C. P., drums | .18 1/4@ | .18 3/4 |
| Gum Arabic, white | .42@ | .45 |
| Amber | .11 3/4@ | .12 1/2 |
| Powdered, U.S.P. | .18@ | .21 |
| Gum Benzoin, Siam | 5.00 | Nom'l |
| Sumatra | 1.40 | Nom'l |
| Gum Galbanum | 1.10@ | 1.35 |
| Gum Myrrh | .55 | Nom'l |
| Henna, pwd. | .28@ | .30 |
| Kaolin | .05@ | .07 |
| Labdanum | 3.25@ | 5.00 |
| Lanolin, hydrous | .30@ | .34 |
| Anhydrous | .31@ | .35 |
| Magnesium, carbonate | .09@ | .10 3/4 |
| Stearate | .24@ | .27 |
| Musk, ounce | 50.00 | Nom'l |
| Olibanum, tears | .21@ | .35 |
| Siftings | .11 1/2@ | .13 |
| Orange Flower Water, gal. | 1.75@ | 2.25 |
| Orris Root, Italian | .70 | Nom'l |
| Paraffin | .06@ | .09 |
| Peroxide | 1.10@ | 1.75 |
| Petrolatum, white | .06 1/4@ | .08 1/2 |
| Quince Seed | 1.50@ | 1.75 |
| Rice Starch | .10 | Nom'l |
| Rose Leaves, red | 3.45@ | 4.00 |
| Rose Water, gal. | 6.50@ | 8.00 |

| | | |
|------------------------------|----------|---------|
| Rosin, M. per cwt. | 7.49@ | |
| Salicylic Acid | .35@ | .40 |
| Saponin | 2.00@ | 2.50 |
| Silicate, 40°, drums, works, | | |
| 100 pounds | .80@ | 1.20 |
| Soap, neutral, white | .20@ | .25 |
| Sodium Carb. | | |
| 58% light, 100 pounds | 1.35@ | 2.35 |
| Hydroxide, 76% solid, 100 | | |
| pounds | 2.60@ | 3.75 |
| Spermaceti | .26@ | .27 |
| Stearate Zinc | .29@ | .30 |
| Styrax | 1.00@ | 1.20 |
| Tartaric Acid | .64 | Nom'l |
| Tragacanth, No. 1 | 3.60@ | 3.85 |
| Triethanolamine | .19 1/2@ | .20 1/2 |
| Violet Flowers | 1.75@ | 2.00 |
| Zinc Oxide, U. S. P. bbls. | .40 1/2 | Nom'l |

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| Cocanut, Manila Grade, | | |
| c.i.f., tanks | .0835@ | |
| Corn, crude, Midwest, mill, | | |
| tanks | .12 3/4@ | |
| Corn Oil, distilled, drums | 16 1/4@ | .16 1/2 |
| Cotton, crude, Southeast, | | |
| tanks | .12 3/4@ | |
| Grease, white | .08 7/8@ | |
| Lard | .1522 1/2@ | |
| Lard Oil, common, No. 1 | | |
| bbls. | .14@ | |
| Palm Niger, drums | .0865 | |
| Peanut, blchd., tanks | .1501@ | |
| Red Oil, distilled, tons | .12@ | |
| Stearic Acid | | |
| Triple Pressed | .18 1/2@ | .18 7/8 |
| Double Pressed | .15 1/2@ | .16 1/8 |
| Tallow, acidless, barrels | .14 1/4@ | |
| Tallow, N. Y. C., extra | .08 3/8@ | |
| Whale oil, refined | .1232 | Nom'l |



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STATE OF NEW YORK } ss.:
COUNTY OF NEW YORK }

Before me, a notary public in and for the State and County, aforesaid, personally appeared Harland J. Wright, who, having been duly sworn according to law, deposes and says that he is the Publisher of THE AMERICAN PERFUMER AND ESSENTIAL OIL REVIEW and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, postal Laws and regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Harland J. Wright, 9 East 38th Street, New York 16, N. Y.; Editor, Harland J. Wright, 9 East 38th St., New York 16, N. Y.; Managing editor, Robin Fowler, Business manager, William Lambert, 9 East 38th St., New York 16, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Robbins Publishing Co., Inc., 9 East 38th St., New York 16, N. Y.; J. H. Moore, 9 East 38th St., New York 16, N. Y.; Gertrude A. Moore, Indian Head Point Road, Riverside, Conn.; F. C. Kendall, 9 East 38th St., New York 16, N. Y.; Natalie Aldrich Kendall, Hardwell Road, Millburn, N. J.; H. O. Andrew, 9 East 38th St., New York 16, N. Y.; M. M. MacCollum, 9 East 38th St., New York 16, N. Y.

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INDEX TO ADVERTISERS

| | | | | | |
|---|-------------|--|------------|--|--------------------|
| Allied Products, Inc. | 24 | Fontaine Products Corp. | — | Northwestern Chemical Co., The | 99 |
| Aluminum Seal Company | — | Forster, René | 90 | Pantha, Laboratoire | 111 |
| American Cholesterol Products, Inc. | 102 | French, Inc., Benj. | 87 | Parento, Inc., Compagnie | 25 |
| Ansbacher-Siegle Corp. | — | Fritzsche Bros., Inc. | — | Paris Cosmetics, Inc. | 71 |
| Aromatic Products, Inc. | — | Insert Pages 9-10-11-12 | — | Parsona, M. W. | 101 |
| Atlantic Refining Co., The | 28 | Furlager Mfg. Co., Inc. | 26 | Penick & Co., S. B. | 16 |
| Atlas Powder Co. | 18 | General Drug Co. | Back Cover | Pennsylvania Refining Co. | 106 |
| Baker & Bros., H. J. | 28 | Givaudan-Delawanna, Inc. | — | Pfaltz, Harry E. | 103 |
| Blackburn-Smith Mfg. Co. | 13 | Insert Pages 72, 73 | — | Polak & Schwartz, Inc. | 84 |
| Bopl-Whittam Corporation | — | Glass Industries, Inc. | 29 | Powell & Co., Inc., John | 93 |
| Braun Co., W. | 102 | Glycerine Producers Association | 23 | Remus & Co., Inc., Edward | 94 |
| Bridgeport Metal Goods Mfg. Co., The | 95 | Glyco Products Co., Inc. | 28 | Revson Co., R. F. | 109 |
| Broder, Harry | 30, 31 | Goldschmidt Corp., The | 6 | Richford Corp. | — |
| Bush & Co., Inc., W. J. | 1, 103, 107 | Gunning & Gunning | 112 | Ritchie & Co., W. C. | — |
| Bush Aromatics, Inc. | 96 | Hazel-Atlas Glass Co. | — | Roure-Du Pont, Inc. | 20 |
| California Fruit Growers Exchange | 3 | Helfrich Laboratories, Inc. | 62, 63 | Schimmel & Co., Inc. | 78 |
| Camax Company, The | — | Heyden Chemical Corp. | — | Seeley & Company | 105 |
| Carr-Lowrey Glass Co. | 8 | Hopkins & Co., J. L. | 81 | Sherwood Refining Company, Inc. | 83 |
| Centflor Mfg. Co. | 66 | Horn, John | 109 | Sierra Talc Co. | 28 |
| Chemo-Puro Mfg. Corp. | 53 | Horn, Inc., James B. | — | Sparhawk Co. | 88 |
| Chiris Co., Inc., Antoine | 74 | House of Hollywood | 106 | Standard Alcohol Co. | 88 |
| Classified Advertisements | 110 | Innis, Speiden & Company | 111 | Standard Specialty & Tube Co. | — |
| Consolidated Fruit Jar Co. | 109 | International Minerals & Chemical Corp. | 32 | Stanton Laboratories | 105 |
| Consolidated Products Co., Inc. | 110 | Interstate Color Co. | 104 | Summit Chemical Products Corp. | 34 |
| Continental Chemical Co. | 109 | Kelton Cosmetic Co. | 89 | Swindell Bros. | 58 |
| Cortizas, M., & Co. | 53 | Kiefer Machine Co., The Karl | — | Synfleur Scientific Laboratories, Inc. | 68 |
| Cosmetics, Inc. | — | Kimble Glass Co. | 17 | Syntomatic Corp. | 80 |
| Cosmia Laboratories | 111 | Koster-Keunen Mfg. Co., Inc. | 94 | Taylor, Chas. T., & Co. | 107 |
| Creative Printmakers Group | 105 | Krause, Richard M. | 104 | Thurston & Braidich | 28 |
| Danco, Inc., Gerard J. | 85 | Lachman-Novasel Paper Co. | 106 | Tombarel Frères | 98 |
| Dodge & Olcott, Inc. | 64 | Laco Products, Inc. | 28 | Tombarel Products Corp. | 98 |
| Dominion Products | 109 | Lanaetex Products Sales Co. | 104 | Turner White Metal Co., Inc. | 100 |
| Dow Chemical Co., The | — | Lautier Fils, Inc. | 93 | Ungerer & Co. | Inside Front Cover |
| Inside Back Cover, 57 | — | Leeben Chemical Co., Inc. | 55 | U. S. Industrial Chemicals, Inc. | — |
| Dreyer, Inc., P. R. | — | Leonhard Wax Co., Inc., Theodor | 102 | Insert Pages 91, 92 | — |
| Drury & Co., Inc., A. C. | 28 | Lueders & Co., George | 2 | van Ameringen-Haebler, Inc. | 14, 15 |
| du Pont de Nemours & Co., E. I. | 76 | MacHale, Inc., Ann J. | 107 | Vanderbilt Co., Inc., R. T. | 100 |
| Duval, Compagnie (Div. of S. B. Penick & Co.) | — | Magnus, Mabée & Reynard, Inc. | 82 | Van Dyk & Co., Inc. | 27 |
| Emulsol Corp., The | — | Malmstrom & Co., N. I. | 86 | Verley and Company, Albert | — |
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The Chemical Nature of the Violet Odor

*The discovery of the ionones on the mistaken formula for the orris ketone
irone . . . The progress and developments in the preparation of violet odors
. . . Startling relation of the ionones to the carotenoids and vitamin A*

by EVERETT SAUL, Ph.D.

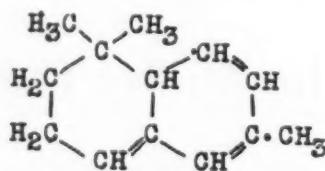
Chief Research Chemist, Felton Chemical Co.

Third Installment

This is the third and final installment
of this series of articles.

TERPENE CHROMOGEN

Müller¹⁰⁴ working in the laboratories of Allondon, Geneva, reopened the question of the ionene structure. Ionene purified by distilling it three times in the presence of iodine and twice over sodium had the constants, b.p. 238-239°/730 mm., d 20/4 0.9356, n 20/D 1.5257. He concluded that ionene must be 1,1,6-trimethyl tetralin. Now p-dimethylaminobenzaldehyde in acetic acid in the presence of phosphoric acid, reacted with ionene and alpha-ionone to give a red coloration. This reaction was not noticeable in the case of beta-ionone. From these results he was led to believe that alpha-ionone could be detected in the presence of beta-ionone and reasoned that some "terpene chromogen" grouping was involved. Later, he^{104a} found that purified ionene partially reacted with the Ehrlich-Müller reagent but it appeared that the reaction was not concerned with the 1,1,6-trimethyl tetralin. He suspected the presence of some other tetralin and suggested the existence of what he called alpha-ionene (LXXXVI).



(alpha-ionene)
(LXXXVI)

(according to
Müller, 1939)

In 1938 Angus¹⁰⁵ presented a summary of the published data on the Raman spectra of the terpenes and terpenic compounds such as beta-ionone. It was shown that there was not good agreement between the work of different observers, that many of the published data were unreliable and that the analysis of mixtures was not possible until more extensive research had been done on the spectra of possible constituents.

Giacolone¹⁰⁶ reported that beta-ionone reacted with Grignard reagents as though it contained an active hydrogen, the latter apparently situated on the 5-methyl group. He was able to prepare alkyl derivatives of beta-ionone by reacting it with alkyl iodides and sodium in absolute alcohol. Using methyl iodide he obtained a product having the constants, b.p. 111-115°/4.5 mm., n 20/D 1.50728, p-bromphenylhydrazone m.p. 129-130°, 2,4-dinitrophenylhydrazone m.p. 114-115°, and using ethyl iodide he isolated a product, b.p. 121-123°/6.5 mm., d 15/4 0.9520, n 20/D 1.51085, p-bromphenylhydrazone m.p. 123°, 2,4-dinitrophenylhydrazone m.p. 127-128°.

SODIUM BISULPHITE PREPARATIONS

For the purpose of studying the separation of alpha- and beta-ionones from their mixture, Bryusova et al.¹⁰⁷ prepared their bisulphite addition-compounds by treating the mixed isomers with sodium bisulphite for 15 hours at 107° in the presence of sodium hydroxide and ammonium chloride. They found that the bisulphite compound of alpha-ionone was insoluble in saturated sodium chloride solution, and the ketone-salt thus removed, when hydrolysed with 12

per cent caustic soda, produced a yield of 50 per cent alpha-ionone based on the initial alpha-isomer present. Approximately 15 per cent beta-ionone was recovered by decomposition of the filtrate by the addition of sodium bicarbonate.

Nametkin et al.¹⁰⁸ found that the ionones could be obtained by the usual steps, employing a Russian coriander oil containing 45 per cent citral, without a preliminary isolation of the citral. This simplified manufacture.

Manufacturers were adding beta-ionone to so-called "true fruit flavors" because when diluted, this chemical yielded an odor resembling that of raspberries. The addition of 1 or 2 mg. of beta-ionone to 1 oz. of such products permitted dilution to 1 gallon of bottler's syrup whereas only 30 fluid ounces could be possible without such addition. The Federal Food and Drug Administration fostered an investigation of the matter, maintaining that beta-ionone had never been authentically identified as a constituent of a natural product. Three samples each of red and black raspberries, consisting of as much as 24 lb. and 22 lb. respectively, were examined¹⁰⁹ and no beta-ionone was found. In certain cases samples of true fruit flavors were found to contain the ketone.

Numerous procedures involving the use of 14 different reagents recommended for the precipitation of aldehydes or ketones were tried and it was found that m-nitrobenzhydrazide gave a precipitate with beta-ionone that seemed suitable for its determination. A gravimetric method was developed by Wilson¹⁰⁹ for quantities of 10-100 mg. of beta-ionone in flavoring extracts. Later¹¹⁰ a technique was evolved, applicable to quantities less than 10 mg. of beta-ionone, employing a semimicro determination of the amino nitrogen in the semicarbazones.

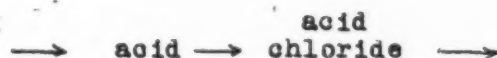
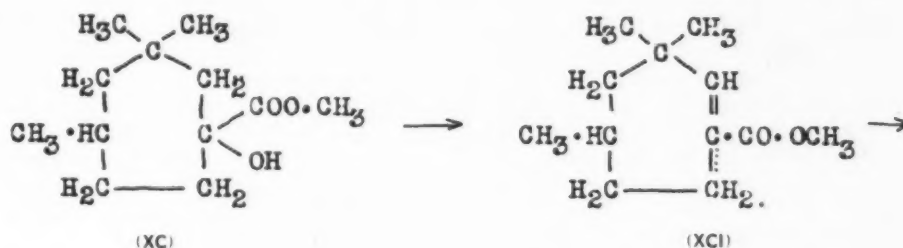
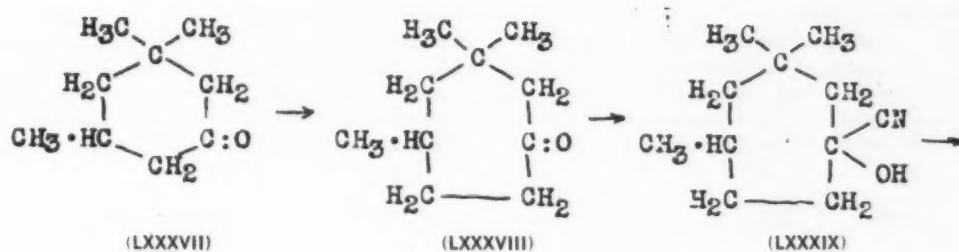
Longenecker, Musulin, Tully, and King¹¹¹ discovered that terpene-like cyclic ketones were especially effective in stimulating vitamin C excretion by the rat. Among the more active cyclic compounds were mentioned alpha- and beta-ionone.

Bryusova and Novgorodskaya¹¹² investigated the interaction of methylionone and sodium bisulphite in the presence of ammonium chloride and alkali for the purpose of separating the four known isomers. As a result they obtained alpha-methylionone a, semicarbazone m.p. 146-146.5°, beta-methylionone a, semicarbazone m.p. 140-140.5°, and a mixture of the b-isomers.

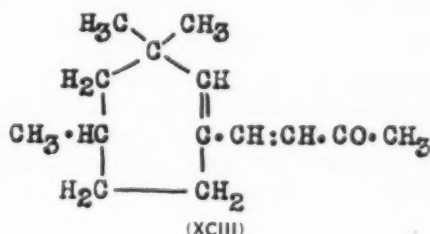
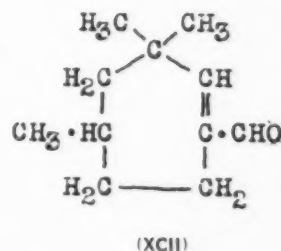
Kilby and Kipping¹¹³ became interested in the formula (LXXVII) of irone suggested by Ruzicka, and attempted to synthesize it. For this purpose they tried to prepare epsilon-methylcitral but were unsuccessful. They reported that further work was in progress but no subsequent publications have appeared along these lines.

Billig and Hayasida¹¹⁴ found that after feeding 85 g. of beta-ionone in 5 g. daily doses to rabbits, the collected urine gave 42 per cent of materials derived from beta-ionone. The products isolated consisted of a mixture of beta-ionol, dihydro-beta-ionol, hydroxy-beta-ionone and hydroxy-dihydro-beta-ionone. The alcohols were optically active and it was interesting to note that the nuclear olefinic link remained unhydrogenated.

On the basis of Ruzicka's suggestion that irone might consist structurally of a seven-membered cyclic compound, Stoll and Scherrer,¹¹⁵ working in the laboratories of Firmenich & Co., decided to investigate the possibility that the irone odor was a function of such a cycloheptenone

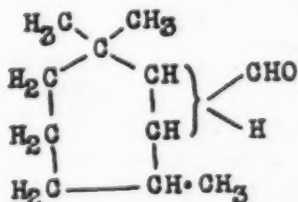
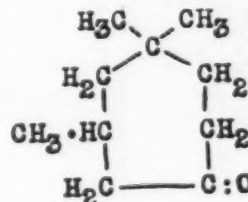
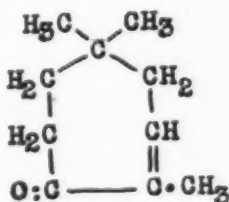
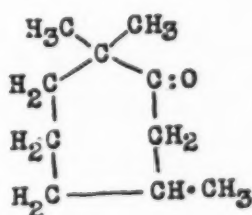


ring. For this purpose they synthesized such an irone isomer. They started with dihydroisophorone (LXXXVII) and by the known reaction with diazomethane formed 3,3,5-trimethylsuberone-1 (LXXXVIII). From this ketone they prepared the cyanhydrin (LXXXIX) which they hydrolysed and esterified (XC). By the action of thionyl chloride on the hydroxy ester they obtained an unsatu-



rated compound (XCI), without attempting to fix the position of the nuclear olefinic link. From this ester they made the acid and then the acyl chloride. By means of the Rosenmund method they reduced the chloride to the aldehyde (XCII) which was then condensed with acetone to form the ketone (XCIII). The series of compounds mentioned are illustrated above.

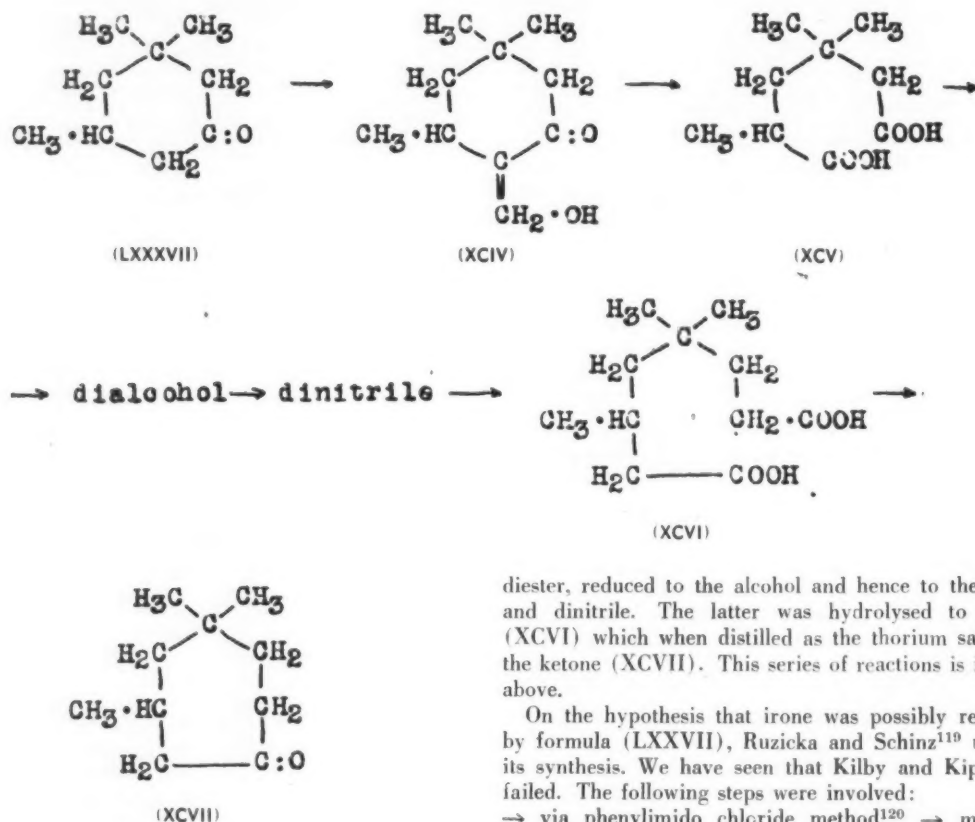
The aldehyde was identified as having a semicarbazone m.p. 172-174° while the final ketone yielded a semicarbazone m.p. 208-209°. The authors reported that the seven-membered irone homologue possessed a flowery, balsamic odor, but appeared to have little in common with the fra-



grance of the violet or irone.

Barbier,^{116,117} working in the laboratories of L. Givaudan & Co., in the course of investigations of the enlargement of hydroaromatic rings, prepared seven-membered cyclic compounds similar to those studied by Ruzicka et al. Some of these are shown on the preceding page.

desired positions so far as irone was concerned, dihydroisophorone proved to be an easily accessible and convenient starting material. By condensing the latter with isoamyl formate in the presence of sodium ethylate, they obtained (XCIV) which on permanganate oxidation yielded the diacid (XCV). This was converted to the

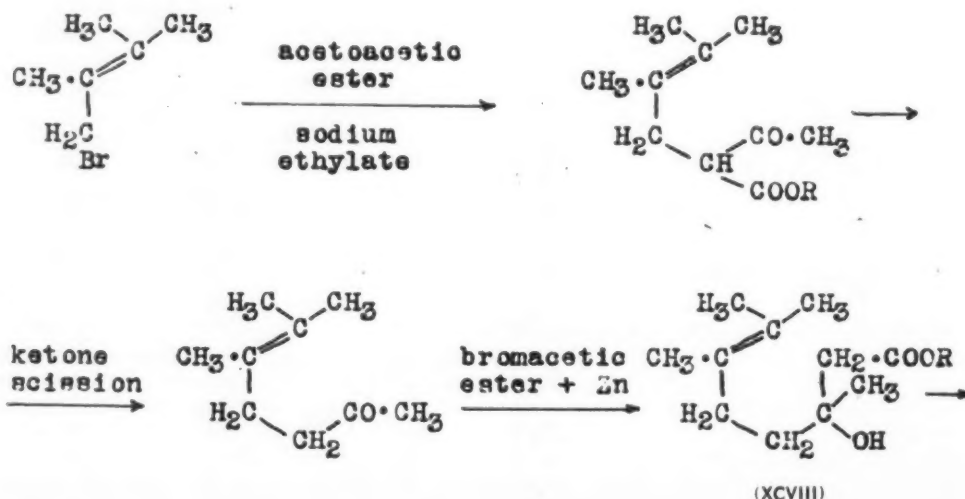


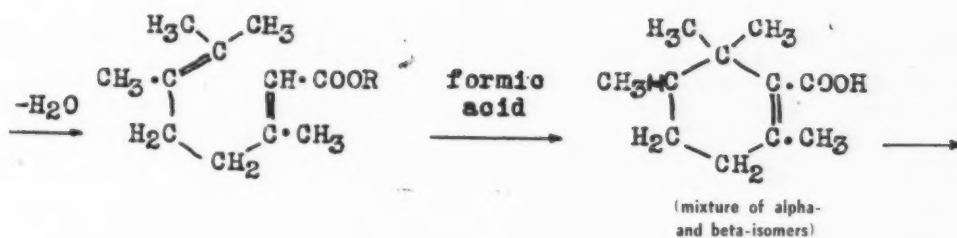
Ruzicka, Schinz and Seidel,¹¹⁸ sponsored by Firmenich & Co., also undertook the study of the synthesis of cycloheptanones. Although the methyl groups were not in the

diester, reduced to the alcohol and hence to the bromide and dinitrile. The latter was hydrolysed to the acid (XCVI) which when distilled as the thorium salt yielded the ketone (XCVII). This series of reactions is illustrated above.

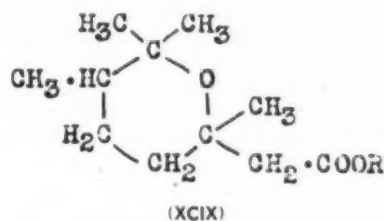
On the hypothesis that irone was possibly represented by formula (LXXVII), Ruzicka and Schinz¹¹⁹ undertook its synthesis. We have seen that Kilby and Kipping had failed. The following steps were involved:

→ via phenylimido chloride method¹²⁰ → mixture of alpha- and beta-cyclocitral → condensation with acetone to (LXXVII). Kilby and Kipping when attempting to remove a molecule of water from (XCVIII), obtained only (XCIX).





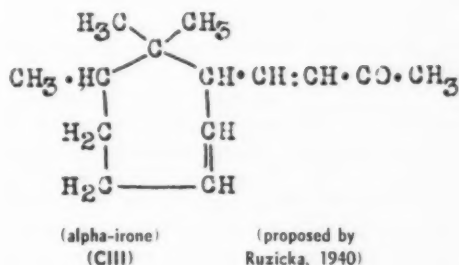
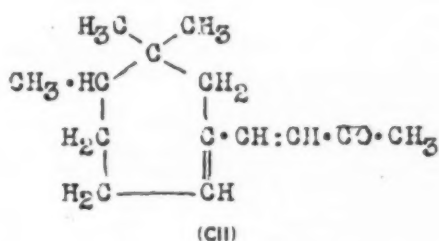
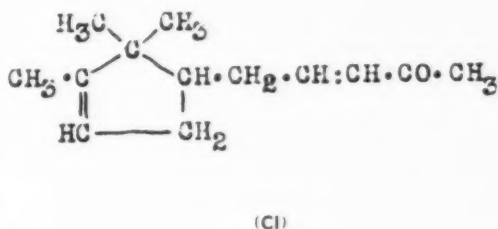
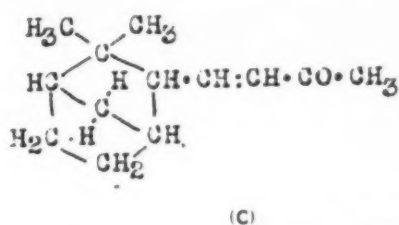
From the cyclocitral, two semicarbazones were isolated, one melting at 214-215° and the other at 140-145°. The latter semicarbazone represented the major constituent.



The authors suggested that perhaps the higher melting semicarbazone resulted from the smaller quantities of the

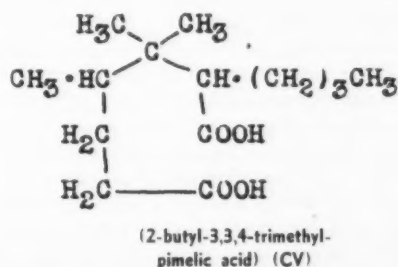
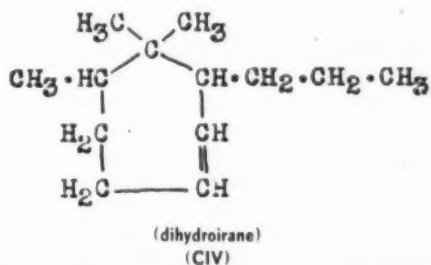
zones were condensed with acetone to give a mixture of the alpha- and beta-ketones, b.p. 105-108°/0.75 mm., d 22/4 0.9492, n 22/D 1.511. Both the density and refractive index were higher than those of iron purified from its phenylsemicarbazone, namely, d 22/4 0.9334 and n 22/D 1.502. A mixed melting-point of the phenylsemicarbazones of iron (165-168°) and the new ketone (165°) resulted in a marked decrease. Furthermore the melting-point of the semicarbazones of the two tetrahydro-derivatives differed by at least 20°. The odor of the new ketone resembled that of the ionones rather than that of iron.

While studying the elimination and migration of methyl groups from quarternary carbon atoms during catalytic dehydrogenation, Linstead and Thomas¹²¹ had occasion to subject ionene to temperature of 305-330° in the presence of both platinized asbestos and palladized charcoal. In



beta-form, the alpha-form preponderating as might be anticipated when employing formic acid as the condensing agent. The aldehydes regenerated from their semicarba-

both cases, 1,6-dimethylnaphthalene was obtained, identical to material which they had synthesized by a new method. The result falls in line with those obtained by



dehydrogenation with sulphur, selenium, etc.

In 1940 Khusnutinov¹²² prepared some analogs of the ionones. By condensing camphenilancarboxaldehyde with acetone he obtained (C), b.p. 137-139°/12 mm., d 20/4 0.9721, n 20/D 1.5007, R_D 58.20, semicarbazone m.p. 164-165°. By using campholenecarboxaldehyde he isolated (CI), b.p. 142°/19 mm., d 20/4 0.9161, n 20/D 1.4835, R_D 59.96, semicarbazone m.p. 160-161°.

In 1940 Loshakov and Shumeiko¹²³ patented the preparation of alpha-ionone by treating pseudoionone with 60-65 per cent sulphuric acid in the presence of benzene, toluene or other inert solvents at temperatures of 25-40°. The following year a similar patent¹²⁴ was granted, applying the same methods to homologues of ionone.

On the basis of extensive degradation studies which for the most part remained unpublished, Ruzicka suggested formula (CII) for irone.

This formula was modified in 1940 to (CIII).

A PROBABLE FORMULA FOR IRONE

Formula (CIII) appeared to be the only one compatible with isolated degradation products and physical properties. It had been shown that ozonization of irone produced 3,3,4-trimethylpimelic acid and further, that ozonization of dihydroirone (CIV) yielded 2-butyl-3,3,4-trimethylpimelic acid (CV).

It was possible to understand how trimethylpimelic acid could be derived from (CII) and (CIII), but (CV) could only have its origin in (CIII).

The authors¹²⁵ argued that such ketones as (CII) and (CIII) should be significantly different in molecular refraction as well as absorption spectra. The former should absorb essentially further in the long wavelengths of the spectrum and have a higher exaltation of molecular refraction. They compared the structure of alpha-ionone with (CIII) and beta-ionone with (CII), calling the ketones alpha- and beta-irone respectively.

Highly purified alpha-ionone and irone exhibited an absorption maximum at about 228 mu. (of alpha, beta-unsaturated ketone group), while beta-ionone had a maximum at about 298 mu. at which point the other two ketones showed only insignificant inflexions. Furthermore, average values for the corrected molecular exaltation of alpha-ionone and irone (1.6) agreed, while those of beta-ionone (2.8) were considerably higher. All of the irone preparations studied, seemed to have the alpha-irone structure. Attempts to form the beta-isomer by energetic chemical treatment of irone have given negative or uncertain results.

MELTING POINT VARIATION

Making matters more complicated, the authors found that samples of commercial irone differed in the melting-points of their crystalline derivatives. For example, the melting-point of the thiosemicarbazone of an old irone sample was 179-180° while that of a recent preparation was only 120°. Since iris oil was originally prepared in the presence of sulphuric acid, the authors investigated the action of boiling 20 per cent sulphuric acid on pure irone. The treated ketone was converted by phenylsemicarbazide to three crystalline phenylsemicarbazone fractions m.p. 152-165°, as well as a noncrystalline derivative. The irones recovered from these derivatives differed slightly from each other in their physical properties. It

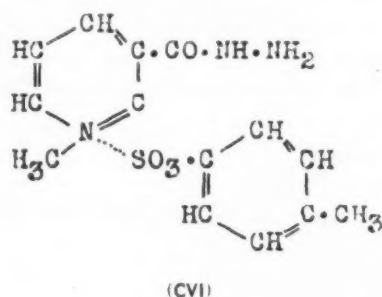
appeared as Ruzicka had already indicated, that natural irone was a mixture.

Vul'fson¹²⁶ interested in preparing a highly purified beta-ionone for use in the synthesis of vitamin A, claimed that a 100 per cent product could be obtained by isomerizing pseudoionone, using sulphuric acid at temperatures from -25 to 15° in organic solvents. The yields were about 75 per cent and the following constants were reported: d 20° 0.9468, n 20/D 1.5206.

Pummerer and Rebmann¹²⁷ in a study of the ozone degradation of carotene and beta-ionone, prepared the heretofore unknown p-nitrophenylhydrazones of alpha-ionone, m.p. 113° (uncor.), and beta-ionone, m.p. 173° (uncor.).

Giactalone¹²⁸ observed the curious fact that when beta-ionone and brom-magnesium-ethyl acetate react, ionene is almost the sole product.

Allen and Gates¹²⁹ described the identification of carbonyl compounds by the use of 1-methyl-3-carbohydrazidopyridinium p-toluenesulphonate (CVI). The beta-ionone derivative melted at 147° (cor.).



Burawoy¹³⁰ studied the absorption spectra of some of the ionones and found that commercial products contained for example only 40-45 per cent of beta-ionone. In Table VIII is given his values for the absorption maxima λ_{max} , and molecular extinction coefficients of purified pseudoionone and alpha- and beta-ionones.

Table VIII

Showing the values of the absorption maxima, γ_{max} , and molecular extinction coefficients of purified pseudoionone and alpha- and beta-ionone, using alcohol as a solvent.

| | $\lambda_{max}A$ | $\epsilon_{max}A$ |
|----------------|------------------|-------------------|
| Pseudoionone* | 2910 | 21800 |
| Alpha-ionone** | 2285 | 14300 |
| Beta-ionone*** | 2935 | 8700 |

*Pseudoionone obtained from semicarbazone m.p. 142°.

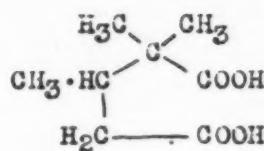
**Alpha-ionone obtained from semicarbazone m.p. 148°.

***Beta-ionone obtained from oxime m.p. 89°.

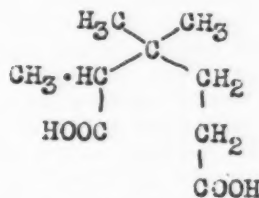
In 1941, Rokhlina and Bodrova¹³¹ claimed that beta-ionone promoted regeneration of amputated extremities of axolotl, the effect being determined by the dose. Beta-ionone was also reported as possessing an antithyroidine action and could be used effectively in hyperthyroidism.

Once again Ruzicka, Seidel, Schinz and Pfeiffer¹³² subjected irone to the action of ozone and chromate. From these oxidations, a mixture of acids was obtained and these, after conversion to the methyl esters, were carefully fractionated. Subsequent hydrolysis of the ester fractions yielded three acids: C₈H₁₄O₄ or dl-1,1,2-trimethylglutaric acid (CVII), C₉H₁₆O₄ or 3,3,4-trimethyl-hexan-1,6-carboxylic acid (CVIII), and C₁₀H₁₈O₄ or 3,3,4-tri-

methylpimelic acid (LXXVIII).



(CVII)



(CVIII)

Gillam and West¹³³ commented that the structural formula of irone still remained obscure. After determining the absorption spectrum of irone, the authors pointed out that the nature of the curve definitely precluded the presence of a conjugated dienone system such as is present in beta-ionone. On the other hand, the absorption spectra of two irone samples from different sources were sufficiently different to confirm the correctness of Ruzicka's assumption that the natural ketone was a mixture. The absorption data indicated the presence of a monosubstituted alpha, beta-unsaturated ketone group and were consistent with the presence of the R-CH:CH.CO.R structure similar to that existing in alpha-ionone.

On the basis of analyses there seemed to be evidence for the presence in English and French irone, of two ketones possessing different empirical formulae. Gillam and West¹³⁴ found this observation supported by light absorption data, which showed that the thiosemicarbazones were identical in the locations of their absorption bands. Furthermore, the values of the respective molecular extinction coefficients were approximately equal only when the molecular weights indicated by the analytical data were used in their calculation. The two molecular weights were 279 and 293, a difference of a methylene group.

ANOMALY IN ABSORPTION SPECTRUMS

The authors repeated Ruzicka's experiment on the effect of boiling the irone with 20 per cent sulphuric acid and confirmed that the absorption spectrum of the irone changes in the sense that it developed a new absorption maximum near 3100 Å. They observed that at first sight it might seem that the result of this treatment was an isomerization to produce a dienone analogous to beta-ionone (Ruzicka's beta-irone). In their experiments, however, the recovered irone continued to change its light-absorbing properties spontaneously even after the sulphuric acid had been removed. According to Gillam and West, it seemed probable that several light-absorbing entities were produced and that some at least of these were labile and tended to disappear on standing.

Evans and Gillam¹³⁵ discovered that the thiosemicarbazones were valuable derivatives of unsaturated carbonyl compounds from the point of view of the identification of the -C:C.CO group by absorption methods because of the facts (1) that the absorption band was of very high intensity, (2) that it was displaced to a part of the spectrum which was especially suitable for accurate measurement, and (3) that the band has been moved so far up the spectrum that absorption due to many of the commoner absorbing impurities was left behind at shorter wavelengths.

Table IX shows the values of the absorption maxima and

molecular extinction coefficients for alpha-ionone and its semicarbazone and thiosemicarbazone derivatives.

Table IX

Showing the values of the absorption maxima and molecular extinction coefficients for alpha-ionone and two derivatives.

| | $\lambda_{\text{max}} \text{Å}$ | $\epsilon_{\text{max}} \text{A}$ |
|--------------------------------|---------------------------------|----------------------------------|
| Alpha-ionone | 2280 | 13300 |
| Alpha-ionone-semicarbazone | 2635 | 31600 |
| Alpha-ionone-thiosemicarbazone | 3025 | 36500 |

A synthesis of pseudoionone was described by Russel and Kenyon¹³⁶ in which 1.33 moles of purified citral were condensed with 13.8 moles of dry acetone in the presence of 0.4 moles of sodium dissolved in 200 cc. of absolute ethanol. The solution of sodium ethylate was added during rapid stirring at such a rate as to maintain a maximum temperature of -5° . The reaction mixture was neutralized by the addition of an aqueous tartaric acid solution and immediately steam-distilled to remove the excess acetone. The crude product was purified by means of its sodium bisulphite addition-compound and subsequent distillation under vacuum. A yield of 45-49 per cent of theory was obtained, boiling at $114-116^\circ/2 \text{ mm.}$, and $124-126^\circ/4 \text{ mm.}$

PHYSICO-CHEMICAL PROPERTIES

Naves and Bachmann¹³⁷ working in the scientific laboratories of L. Givaudan and Co., Geneva, made a thorough study of the physico-chemical properties of the ionones and derivatives. Alpha-ionone was purified by means of its sodium bisulphite addition-compound, yielding a product having the constants, b.p. $80-82^\circ/1 \text{ mm.}$, $121-122^\circ/10 \text{ mm.}$, $d_{20/4} 0.9319$, $n_{20/D} 1.49818$, $R_D 60.46$, semicarbazone m.p. $142-143^\circ$ (cor.), 4-phenylsemicarbazone m.p. $186.5-187^\circ$, 2,4-dinitrophenylhydrazone m.p. 151° . Purification of beta-ionone by means of its semicarbazone, m.p. $148.5-149.0^\circ$ and hydrolysis with phthalic anhydride yielded 94 per cent of a product having the properties, b.p. $88-90^\circ/1 \text{ mm.}$, $128-129^\circ/10 \text{ mm.}$, $d_{20/4} 0.9448$, $n_{20/D} 1.51948$, $R_D 61.78$, 4-phenylsemicarbazone m.p. $157.5-158.0^\circ$. The authors maintain that mixtures of alpha- and beta-ionones can readily be analyzed by measuring the dispersion of the optical refractivity, since beta-ionone showed a much greater dispersive action than the alpha-isomer.

Pure methylionone was obtained by regeneration from its semicarbazone m.p. $203.5-204.0^\circ$, having the constants, b.p. $93-94^\circ/1 \text{ mm.}$, $130-131^\circ/10 \text{ mm.}$, $d_{20/4} 0.9345$, $n_{20/D} 1.50188$, $R_D 65.10$, phenylsemicarbazone m.p. $181.5-182.0^\circ$, 2,4-dinitrophenylhydrazone m.p. $163.5-164.0^\circ$.

Bouveault reduction of alpha-ionone, beta-ionone and methylionone gave the corresponding dihydroionols in

quantitative yields. These alcohols were further reduced using platinum dioxide as a catalyst, to the tetrahydro-ionols.

For all of these compounds many physical data were tabulated, including surface tensions, specific cohesions, parachors, molecular surface energies, and k values (Ramsay-Shields-Eötvös). The dielectric constants and dipolar moments for alpha- and beta-ionones have been determined. Consideration of these findings seemed to indicate that the ionones should have the cis-ethylenic structure and that the butene or butane chain is rolled up into an open ring.

Dehydration of alpha-ionone with iodine gave 67 per cent of ionene, b.p. 107-108°/10 mm., $d_{20/4}$ 0.9370, $n_{20/D}$ 1.52542, R_D 56.95. Similarly, methylionone yielded about 12 per cent of methylionene, b.p. 120-122°/10 mm., $d_{20/4}$ 0.9358, $n_{20/D}$ 1.52398, R_D 61.52.

RAMAN SPECTRUM STUDY

The ultraviolet absorption throughout the range 240-385 mu. was determined¹³⁸ for alpha- and beta-ionones and methyl-alpha-ionone. The Raman spectrum was studied for the same three compounds and also dihydro-alpha-ionol, dihydro-beta-ionol and methyl-dihydro-alpha-ionol. In general the authors agree with work previously published.

Sobotka, Bloch, Cahnmann, Feldbau and Rosen¹³⁹ pointed out that the carbon atom from which the side chain issues in alpha-ionone, was a center of asymmetry. It might temporarily lose its hydrogen atom by shifting of either the olefinic link in the nucleus or of that of the side chain. Any set of conditions under which an equilibrium existed between alpha- and beta-ionone might thus lead to the isomerization of the alpha-ionone. The observations reported in a previous paper¹⁴⁰ suggested the probability under certain experimental conditions, of shifts of the nuclear olefinic link from the beta-ionone structure to the alpha-ionone structure. The likelihood of the shift might be gauged by the susceptibility of optically active alpha-ionone to racemization. The authors therefore undertook the resolution of dl-alpha-ionone into its optically active components. The resolution was accomplished by means of l-menthylhydrazone. The resulting d-alpha-ionone and l-alpha-ionone showed specific rotations of +347° and -406°. Their refractive indices agreed with that of racemic alpha-ionone. There was a distinct difference in odor reported between the d- and l-form. Table X shows the melting-points of two derivatives of the optically active and racemic forms of alpha-ionone.

Young, Cristol, Andrews and Lindenbaum¹⁴¹ "purified" a commercial grade of beta-ionone by recrystallization of its semicarbazone followed by decomposition by steam-

distillation and liberation of the ionone in the presence of phthalic anhydride. Spectrophotometric comparison of the "pure" product with the starting material showed both to have identical maximum extinction coefficients. It was decided to study the effect of various acid media on the decomposition of the beta-ionone semicarbazone. The results are shown in Table XI.

Table X

Showing the melting-points of two derivatives of the optically active and racemic forms of alpha-ionone.

| | 2, 4-dinitro-phenylhydrazone m. p. | p-chlor-benzoylhydrazone m. p. |
|------------------|---------------------------------------|-----------------------------------|
| l-alpha-ionone | 133° | 200-201° |
| d-alpha-ionone | 129° | 196-198° |
| d l-alpha-ionone | 143° | 214° |

Table XI

Showing the properties of beta-ionone after liberation from the semicarbazone by the action of various acid media.

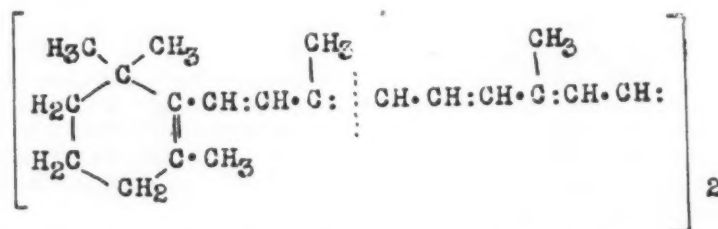
| Method of semicarbazone decomposition | Semicarbazone g. | Am't. of acid g. | ϵ_{max} (a) 296 mu. | $n_{20/D}$ | % purity |
|---------------------------------------|------------------|------------------|---------------------------------|------------|----------|
| Phthalic anhydride (b) | 72 | 72 | 8600 | 1.5175 | 80 |
| Phthalic anhydride (b) | 5 | 5 | 9600 | 1.5175 | 90 |
| Succinic acid (b) | 5 | .17 eq. | 10100 | 1.5198 | 95 |
| Phosphoric acid (b) | 5 | .12 eq. | 10100 | 1.5200 | 95 |
| Sulphuric acid (c) | 68 | 1.0 eq. | 10100 | 1.5205 | 95 |
| Sulphuric acid (b) | 5 | .12 eq. | 10500 | 1.5211 | 98 |
| Sulphuric acid (d) | 5 | .10 eq. | 10700 | 1.5211 | 100 |

- (a) solvent used was 95 per cent alcohol
 (b) steam-distilled liberated beta-ionone from acid mixture
 (c) refluxed 3 hours with 300 ml. 3 N acid
 (d) semicarbazone shaken at room temperature for 3.5 days with a mixture of 20 ml. petroleum ether and 4 8ml. of 2 N sulphuric acid (method of Heilbron et al.¹⁴²)

Of the several purification methods tried, the one employing sulphuric acid produced the best result. Since neither beta-ionone nor its semicarbazone are isomerized under the conditions of hydrolysis it was considered probable that Heilbron's procedure gave absolutely pure beta-ionone. The extinction coefficient of beta-ionone samples was not altered by exposure to hot or cold sulphuric acid. Nor did the unhydrolysed portion of a 1/3 hydrolysed mixture show any deviation in spectrum from that of a wholly unhydrolysed semicarbazone. Sobotka et al.¹⁴³ reported 12,700 as the molecular extinction coefficient for beta-ionone at maximum wavelength 296 mu.

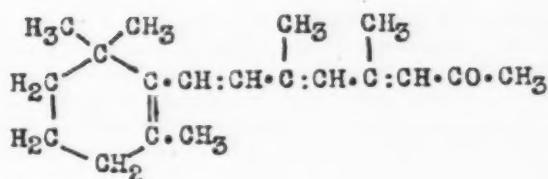
The Ionones, Carotenoids and Vitamin A

One of the most unexpected points of interest in the



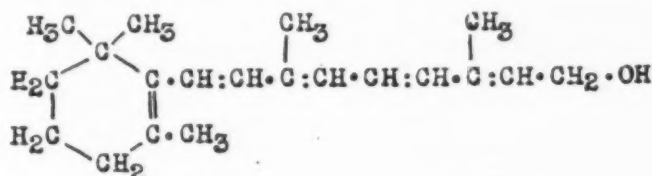
(beta-carotene)

story of the ionones is the role they were discovered to play in the chemistry of the carotenoids and vitamin A. It appears that as far back as 1907, Escher¹⁴⁴ had observed that carotene, during autoxidation in air, formed a product whose odor was reminiscent of the violet. Many years elapsed until Karrer and Helfenstein¹⁴⁵ in 1929, again noticed an odor of ionone, when oxidizing carotene in benzene solution with permanganate. They reported that the odor filled the room and was so marked that beta-ionone was assumed to be present although it was not at that time isolated. In fact Karrer proposed a formula for carotene containing the beta-ionone nucleus which is shown on the preceding page.



(beta-euionone) (CX)

tepohlis iolithus, umbrina and aurea form ionone from the carotene of carrots added to them. He obtained ionone by steam distillation of the freshly gathered moss. It was

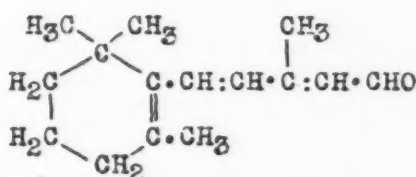


(vitamin A) (CIX)

Degradation studies on beta-carotene yielded the same oxidation products as were obtained by oxidation of beta-ionone. Furthermore, from the quantity of degradation products, it was clearly evident that beta-carotene contained two beta-ionone nuclei. Alpha-carotene was demonstrated to have one beta-ionone and one alpha-ionone nucleus at the head and tail of the long chain of conjugated olefinic linkages.

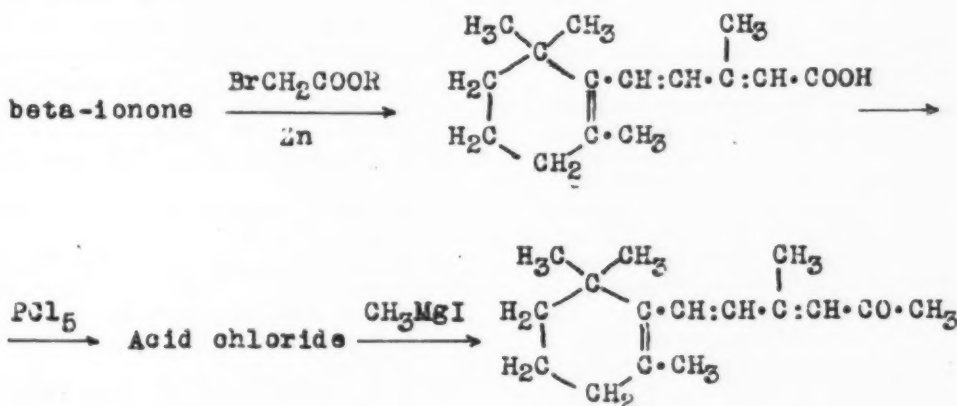
Finally in 1931, Karrer¹⁴⁶ proposed a structural formula for vitamin A (CIX) which has been successfully proved by its synthesis¹⁴⁷ from beta-ionone.

While conducting research on the synthesis of vitamin



(beta-ionylidene acetaldehyde)
(CXI)

identified by its semicarbazone and color reactions. Again it was postulated that the ionone developed by the aut-



A, Karrer and Morf¹⁴⁸ in 1934, prepared what they called beta-euionone (CX) by the following steps:

The last compound when subjected to the same series of reactions produced beta-euionone.

This ketone, b.p. 105-106°/0.1 mm., was without vitamin A action but was reported to possess a finer and more powerful violet aroma than the ionones.

Tischer¹⁴⁹ found that dried rock mosses such as Tren-

oxidation of carotene.

Beta-ionylidene acetaldehyde (CXI) was an important intermediate for syntheses in the carotenoid group.

The carbonyl compound which Heilbron and his associates^{150, 151} obtained from the so-called barium beta-ionylidene acetate by dry distillation with barium formate was found¹⁴⁰ to be identical with alpha-ionone. The same cleavage occurred in the case of barium alpha-ionylidene

acetate. Sobotka et al.,¹⁴³ in a continuation of their work on the phenomenon of the nuclear shift in barium beta-ionylidene acetate, found evidence that when beta-ionone was condensed with ethyl bromacetate using the Reformatsky procedure, the ethyl ionylidene acetate formed is the alpha-form. The presence of the expected beta-

isomer was excluded on grounds of ultraviolet spectroscopy.

An exhaustive treatise on the carotenoids may be found in *Organic Chemistry, An Advanced Treatise*, Chap. 14, John Wiley & Sons, Inc., New York, N. Y., published in 1938.

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Survey of Recent Cosmetic Patents

Registered Agent before the U. S. Patent Office discusses U. S. and foreign patents . . . Any inquiries relating to patents and trade marks will be met with prompt attention . . .

by I. J. FELLNER, Ph.D.

Lipstick holder. Anthony G. Rosa, Lyndhurst, N. J. *U. S. 2,379,105, June 26, 1945.* A cylindrical tube adapted to receive a lipstick therein has an open bottom and is formed with slits in its top. Within this tube a slidable carriage is provided which serves to support the lipstick. A spring actuates said carriage whereby the lipstick is urged upwards. The tube is formed with openings oppositely disposed in the wall thereof and carries bars oppositely arranged inside to arrest the upward motion of the lipstick, said bars terminating in studs projecting through said openings. A cap closes the bottom of the tube, and another cap engages the top of the tube and actuates said studs.

Liquid dentifrice. Colgate-Palmolive-Peet Company, Jersey City, N. J. *Canadian 426,103, March 13, 1945.* The detergent contains an aqueous solution of ammonium sulphates of coconut oil fatty acid monoglycerides, ammoniumoleyl sulfate, glycerine, ethylalcohol, sodium chloride, sucrose and gum.

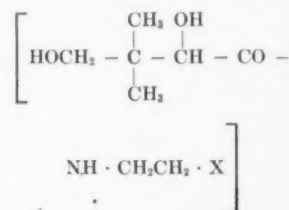
Detergent Composition. Allied Chemical & Dye Corp., New York, N. Y. *U. S. 2,374,544, April 24, 1945.* A solid detergent mass adapted for toilet purposes similar to ordinary soap comprises a solid, non-aromatic, soapless ingredient which is a neutral alkali metal salt of an anion-active, polar-non polar organic derivative of sulfuric acid such as sulfates and sulfonates of higher aliphatic hydrocarbons, of higher mono alkyl esters of lower mono- and polycarboxylic acids, of polyhydric

alcohol partial esters of fatty acids, of lower alkyl esters of aliphatic alcohols, or of mono alkyl-amides and imides of polycarboxylic acids, said derivatives having a single higher open-chain hydrocarbon group of 12 to 14 carbon atoms in the non polar portion of the molecule, in intimate mixture with at least a substantially equal weight of thiourea which serves to protect said soapless detergent from the dissolving action of water and from disintegration during toilet use.

Toothbrush. Christian Kisky, Oswego, Oregon. *U. S. 2,378,641, June 19, 1945.* A toothbrush wherein the tips of the bristles are formed into two normally intersecting planes and the handle has longitudinal flattened faces along the hand-engaging portion thereof in such a manner that two of said faces are parallel with the planes of the bristle tips.

Skin protective agents. Vasenolwerke Dr. Arthur Koepp, A.G., Germany. *French 885,716, September 23, 1943.* The agent consists of a mixture of fats, higher alcohols or their esters, natural waxes, high molecular hydrocarbons such as paraffin and ceresin, adsorbents, such as zinc oxide, and lubricants, such as tallow. Example: 400 parts of beeswax, 180 parts of ceresin, and 220 parts of paraffin wax are melted together with 70 parts of paraffin oil. The mixture is added with 10 parts of tannin, 40 parts of tallow, 60 parts of colloidal SiO_2 , and 20 parts of zinc oxide, and then stirred until beginning solidification whereupon stirring is discontinued until pellets are formed.

Cosmetic preparation. Hoffman La Roche, Ltd., Montreal, Quebec, Canada. *Canadian 428,563, July 3, 1945.* A preparation for improving the condition of the hair and scalp containing a compound of the formula:



wherein X stands for the radicals OH, CH_2OH , COOH and COOMe, Me being selected from alkali and alkali earth metals; in particular, use is made of the calcium salt of pantothenic acid.

Face lotion and wrinkle powder. A. Laruelle, Liege, Belgium. *Belgian 447,478, October 8, 1942.* The face lotion contains zinc oxide, glycerin and rose water. The wrinkle powder comprises corn flour, zinc oxide, Spanish white, starch, iris powder, and essential oils.

Cream base. Deutsche Hydrierwerke A. G., Germany. *French 881,351, May 22, 1943.* Bases for creams, ointments and the like are prepared by mixing esters of polyvalent primary alcohols having at least 3 primary OH groups and high molecular soap forming carbonic acids with emulsifiable substances. Example: 10 parts of boric acid are incorporated into 90 parts of dipenta-erythritol-distearyl-tetraoleate to form a good boric acid ointment.

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